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## Enzyme Product Catalog (2011)

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### **I. General Information on Enzyme Products**

Syncore offers a wide range of novel or proprietary enzymes including ene reductases, ketone reductases (alcohol dehydrogenases), nitrile hydratases, nitrilases, oxynitrilases (hydroxynitrile lyases), transaminases, nitro reductases, amidases, alcohol oxidases, amino acid dehydrogenases, epoxide hydrolases, P450 monooxygenases, most classic hydrolytic enzymes (lipases, proteases, amidases, esterases) and their immobilized forms. The typical timeline for enzyme production is

- ❖ Kg scale: 1-2 months
- ❖ 10kg scale: 2-3 months
- ❖ 100kg scale: 3-4 months

**For additional information on individual enzymes, their activity, purity and other specifications, bulk pricing, and delivery time, please contact [services@syncozymes.com](mailto:services@syncozymes.com).**



## II. Contract R&D Services for Enzyme Development & Chemical Synthesis

Syncore provides a wide range of cost-effective and high quality customer services.. **Our business model is fee-for-service** and we aspire to be your reliable partner in lowering the cost of enzyme development and their synthetic applications. As a research-driven and customer-focused company, our experienced team has streamlined the gene-to-protein-to-chemistry process to provide a wide range of services for industrial applications:

- ❖ Design and development of biocatalytic chemical processes
- ❖ Enzyme cloning, expression, and fermentation
- ❖ Enzyme production and purification (liter to >1,000L)
- ❖ Genome mining and enzyme library development
- ❖ High throughput screening of biotransformations
- ❖ Protein engineering and directed evolution
- ❖ Synthesis of chiral building blocks and intermediates

We have the **state-of-the-art equipment in both biology and chemistry** including:

- ❖ 30L-500L Fermentors
- ❖ 400MHz NMR
- ❖ Homogenizer
- ❖ HPLC (chiral)
- ❖ HT Screening and Protein Engineering Hardware and Software
- ❖ Kilo Chemistry and Biology Labs
- ❖ LC-MS
- ❖ Lyophilizer
- ❖ Microwave Synthesizer
- ❖ Polymerase Chain Reactors (PCRs)

For additional information on contract R&D services, FTE rate and delivery time, please contact [services@syncozymes.com](mailto:services@syncozymes.com).

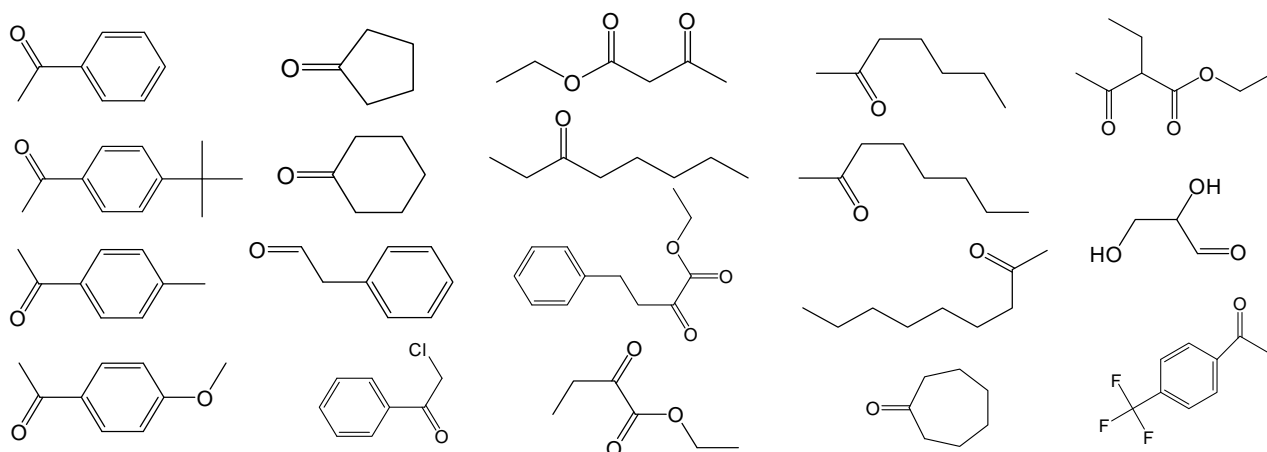
### III. Enzyme Catalog

#### 1. Ketoreductases

The library of ketone reductases (ES-KRED) is able to catalyze regio- and stereoselective reduction of a wide range of aldehydes,  $\beta$ -ketoesters,  $\alpha$ -ketoesters and ketones. The reaction as followed :



Substrate



For information on individual enzyme's activity, purity and other specifications, as well as bulk pricing, please contact [services@syncozymes.com](mailto:services@syncozymes.com).

Catalog No.	Product Name	Substrate Spectrum	Prices (US Dollars)
ES-KRED-101	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
ES-KRED-102	ketoreductase	broad substrate spectrum	1 g \$998
ES-KRED-103	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
ES-KRED-104	ketoreductase	broad substrate spectrum	1 g \$998
ES-KRED-105	ketoreductase	broad substrate spectrum	1 g \$998
ES-KRED-106	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
ES-KRED-107	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
ES-KRED-108	ketoreductase	broad substrate spectrum	1 g \$998

<b>ES-KRED-109</b>	ketoreductase	broad substrate spectrum	1 g \$998
<b>ES-KRED-110</b>	ketoreductase	broad substrate spectrum	1 g \$998
<b>ES-KRED-111</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-112</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-113</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-114</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-115</b>	ketoreductase	broad substrate spectrum	1 g \$998
<b>ES-KRED-116</b>	ketoreductase	broad substrate spectrum	1 g \$998
<b>ES-KRED-117</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-118</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-119</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-120</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-121</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-122</b>	ketoreductase	broad substrate spectrum	1 g \$998
<b>ES-KRED-123</b>	ketoreductase	broad substrate spectrum	1 g \$998
<b>ES-KRED-124</b>	ketoreductase	broad substrate spectrum	1 g \$998
<b>ES-KRED-125</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-126</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-127</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-128</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-129</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones, <b>thermostable</b>	1 g \$998
<b>ES-KRED-130</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-131</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998

<b>ES-KRED-132</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-133</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-134</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-135</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-136</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-137</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-138</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-139</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-140</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones, <b>thermostable</b>	1 g \$998
<b>ES-KRED-141</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones, <b>thermostable</b>	1 g \$998
<b>ES-KRED-142</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-143</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-144</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-145</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-146</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones, <b>thermostable</b>	1 g \$998
<b>ES-KRED-147</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-148</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-149</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-150</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-151</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-152</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-153</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones, <b>thermostable</b>	1 g \$998
<b>ES-KRED-154</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998

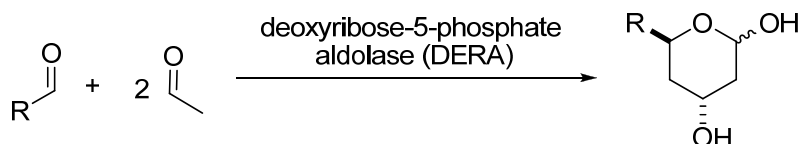
<b>ES-KRED-155</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones, <b>thermostable</b>	1 g \$998
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<b>ES-KRED-158</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-159</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
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<b>ES-KRED-201</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-202</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-203</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
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<b>ES-KRED-208</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-209</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-210</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-211</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-212</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-213</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-214</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-215</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-216</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-217</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-218</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-219</b>	ketoreductase	aldehydes, $\beta$ -ketoesters, $\alpha$ -ketoesters and ketones	1 g \$998
<b>ES-KRED-1210</b>	<b>a set of one hundred and twenty-one ketoreductases, 50 mg each</b>		<b>\$17,800</b>

## 2. 2-Deoxy-D-ribose 5-phosphate aldolase

Aldolase (ES-DERA) catalyzes enantioselective carbon-carbon bond formation, generating up to two chiral centers under mild reaction conditions. They are emerging as powerful and cost efficient tools for the industrial synthesis of chiral molecules.

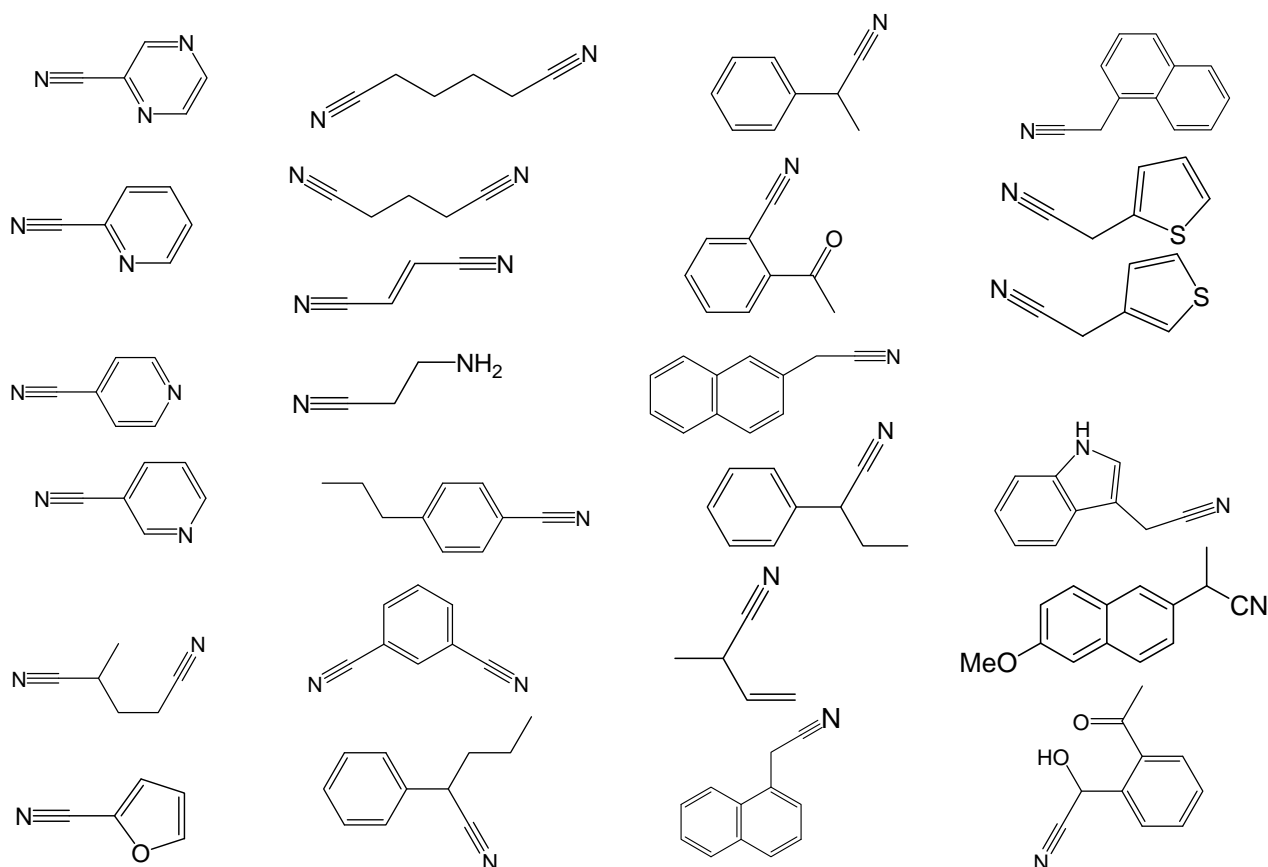
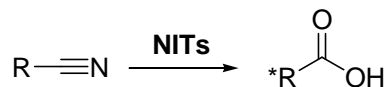


For information on individual enzyme's activity, purity and other specifications, as well as bulk pricing, please contact [services@syncozymes.com](mailto:services@syncozymes.com).

Catalog No.	Product Name	Substrate Spectrum	Prices (US Dollars)
ES-DERA-101	Aldolase	broad substrate spectrum	1 g \$998
ES-DERA-102	Aldolase	broad substrate spectrum	1 g \$998
ES-DERA-103	Aldolase	broad substrate spectrum	1 g \$998
ES-DERA-104	Aldolase	broad substrate spectrum	1 g \$998
ES-DERA-105	Aldolase	broad substrate spectrum	1 g \$998
ES-DERA-106	Aldolase	broad substrate spectrum	1 g \$998
ES-DERA-600	a set of Six Aldolase, 50 mg each		\$980

### 3. Nitrilases

Nitrilase (ES-NIT) catalyzes the synthesis of chiral carboxylic acids through regio- and stereoselective hydrolysis of a wide range of aliphatic and aromatic nitriles.



For information on individual enzyme's activity, purity and other specifications, as well as bulk pricing, please contact [services@syncozymes.com](mailto:services@syncozymes.com).

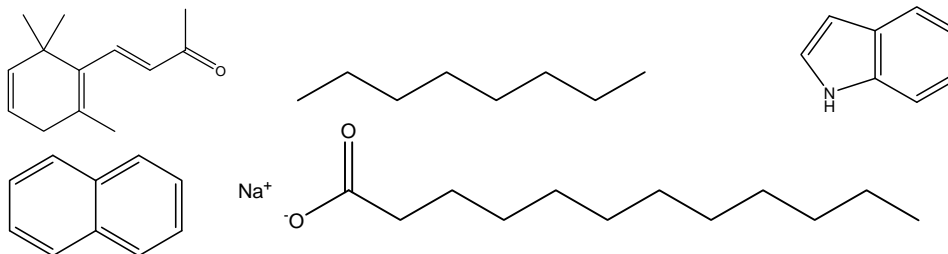
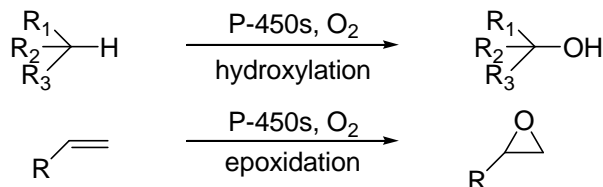
Catalog No.	Product Name	Substrate Spectrum	Prices (US Dollars)
ES-NIT-101	nitrilase	broad substrate spectrum, <b>thermostable</b>	1 g \$998
ES-NIT-102	nitrilase	aliphatic and aromatic nitriles	1 g \$998
ES-NIT-103	nitrilase	broad substrate spectrum, <b>thermostable</b>	1 g \$998
ES-NIT-104	nitrilase	broad substrate spectrum, <b>thermostable</b>	1 g \$998

<b>ES-NIT-105</b>	nitrilase	aliphatic and aromatic nitriles, <b>thermostable</b>	1 g \$998
<b>ES-NIT-106</b>	nitrilase	broad substrate spectrum, <b>thermostable</b>	1 g \$998
<b>ES-NIT-107</b>	nitrilase	aliphatic and aromatic nitriles, <b>thermostable</b>	1 g \$998
<b>ES-NIT-108</b>	nitrilase	aliphatic and aromatic nitriles	1 g \$998
<b>ES-NIT-109</b>	nitrilase	aliphatic and aromatic nitriles	1 g \$998
<b>ES-NIT-110</b>	nitrilase	broad substrate spectrum, <b>thermostable</b>	1 g \$998
<b>ES-NIT-111</b>	nitrilase	aliphatic and aromatic nitriles	1 g \$998
<b>ES-NIT-112</b>	nitrilase	broad substrate spectrum, <b>thermostable</b>	1 g \$998
<b>ES-NIT-113</b>	nitrilase	aliphatic and aromatic nitriles	1 g \$998
<b>ES-NIT-114</b>	nitrilase	aliphatic and aromatic nitriles	1 g \$998
<b>ES-NIT-115</b>	nitrilase	broad substrate spectrum, <b>thermostable</b>	1 g \$998
<b>ES-NIT-116</b>	nitrilase	broad substrate spectrum, <b>thermostable</b>	1 g \$998
<b>ES-NIT-117</b>	nitrilase	broad substrate spectrum, <b>thermostable</b>	1 g \$998
<b>ES-NIT-118</b>	nitrilase	broad substrate spectrum, <b>thermostable</b>	1 g \$998
<b>ES-NIT-119</b>	nitrilase	broad substrate spectrum	1 g \$998
<b>ES-NIT-120</b>	nitrilase	broad substrate spectrum	1 g \$998
<b>ES-NIT-121</b>	nitrilase	broad substrate spectrum	1 g \$998
<b>ES-NIT-122</b>	nitrilase	aliphatic and aromatic nitriles	1 g \$998
<b>ES-NIT-123</b>	nitrilase	aliphatic and aromatic nitriles	1 g \$998
<b>ES-NIT-124</b>	nitrilase	aliphatic and aromatic nitriles	1 g \$998
<b>ES-NIT-125</b>	nitrilase	broad substrate spectrum	1 g \$998
<b>ES-NIT-126</b>	nitrilase	broad substrate spectrum	1 g \$998
<b>ES-NIT-127</b>	nitrilase	broad substrate spectrum	1 g \$998

<b>ES-NIT-128</b>	nitrilase	broad substrate spectrum	1 g \$998
<b>ES-NIT-129</b>	nitrilase	broad substrate spectrum	1 g \$998
<b>ES-NIT-130</b>	nitrilase	broad substrate spectrum	1 g \$998
<b>ES-NIT-131</b>	nitrilase	broad substrate spectrum	1 g \$998
<b>ES-NIT-132</b>	nitrilase	broad substrate spectrum	1 g \$998
<b>ES-NIT-133</b>	nitrilase	broad substrate spectrum	1 g \$998
<b>ES-NIT-134</b>	nitrilase	broad substrate spectrum	1 g \$998
<b>ES-NIT-135</b>	nitrilase	broad substrate spectrum	1 g \$998
<b>ES-NIT-136</b>	nitrilase	broad substrate spectrum	1 g \$998
<b>ES-NIT-137</b>	nitrilase	broad substrate spectrum	1 g \$998
<b>ES-NIT-138</b>	nitrilase	broad substrate spectrum	1 g \$998
<b>ES-NIT-139</b>	nitrilase	aliphatic and aromatic nitriles	1 g \$998
<b>ES-NIT-140</b>	nitrilase	broad substrate spectrum	1 g \$998
<b>ES-NIT-4000</b>	<b>a set of forty nitrilases, 50 mg each</b>		<b>\$5,900</b>

### 4. Cytochrome P450 Monooxygenase

The library of cytochrome P450 monooxygenases (ES-CYP) is able to hydroxylate unreactive carbons (C-H activation) or oxidize heteroatoms (N, S, etc.) in the presence of oxygen.

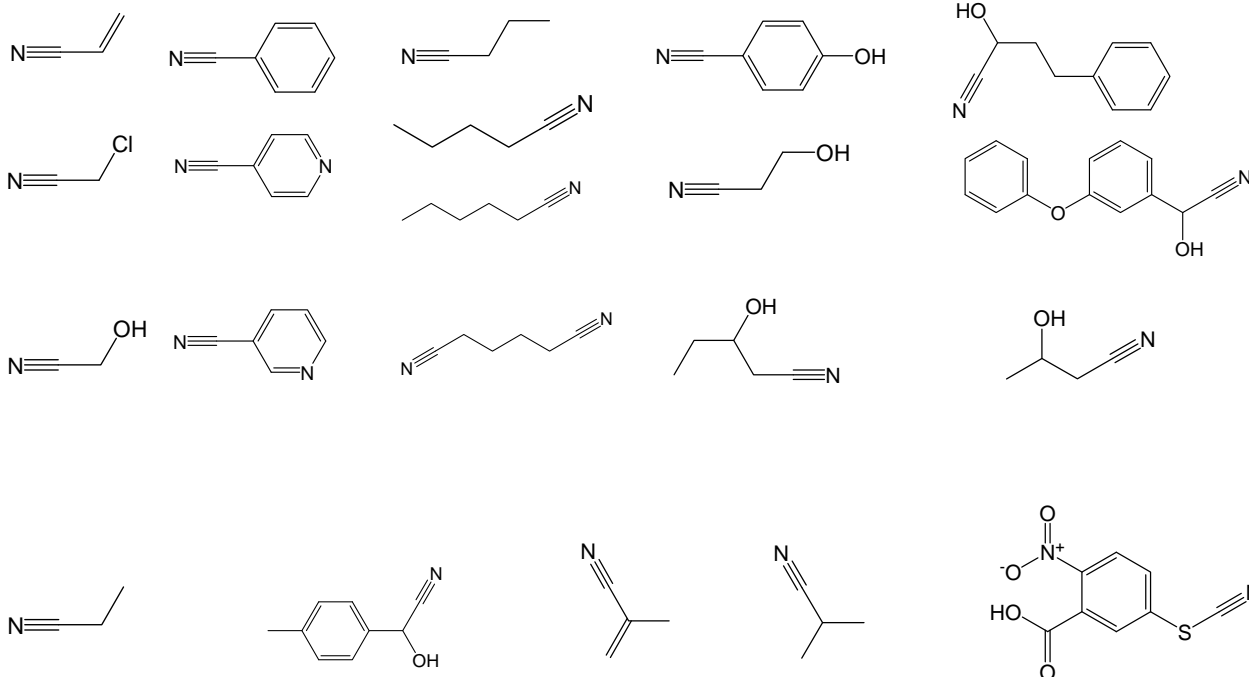
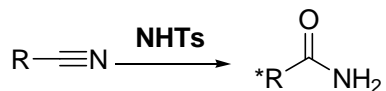


For information on individual enzyme's activity, purity and other specifications, as well as bulk pricing, please contact [services@syncozymes.com](mailto:services@syncozymes.com).

Catalog No.	Product Name	Substrate Spectrum	Prices (US Dollars)
ES-CYP-101	cytochrome P450 monooxygenase	broad substrate spectrum	1 g \$998
ES-CYP-102	cytochrome P450 monooxygenase	broad substrate spectrum	1 g \$998
ES-CYP-103	cytochrome P450 monooxygenase	broad substrate spectrum	1 g \$998
ES-CYP-104	cytochrome P450 monooxygenase	broad substrate spectrum	1 g \$998
ES-CYP-105	cytochrome P450 monooxygenase	broad substrate spectrum	1 g \$998
ES-CYP-500	<b>a set of five cytochrome P450 monooxygenases, 50 mg each</b>		\$800

## 5. Nitrile Hydratases

The library of nitrile hydratases (ES-NHT) is able to catalyze the synthesis of chiral amides through regio- and stereoselective hydrolysis of a variety of aliphatic and aromatic nitriles.



For information on individual enzyme's activity, purity and other specifications, as well as bulk pricing, please contact [services@syncozymes.com](mailto:services@syncozymes.com)

Catalog No.	Product Name	Substrate Spectrum	Prices (US Dollars)
ES-NHT-101	nitrile hydratase	broad substrate spectrum	1 g \$998
ES-NHT-102	nitrile hydratase	aliphatic and aromatic nitriles	1 g \$998
ES-NHT-103	nitrile hydratase	broad substrate spectrum	1 g \$998
ES-NHT-104	nitrile hydratase	aliphatic and aromatic nitriles	1 g \$998
ES-NHT-105	nitrile hydratase	aliphatic and aromatic nitriles	1 g \$998
ES-NHT-106	nitrile hydratase	aliphatic and aromatic nitriles	1 g \$998
ES-NHT-107	nitrile	aliphatic and aromatic nitriles,	

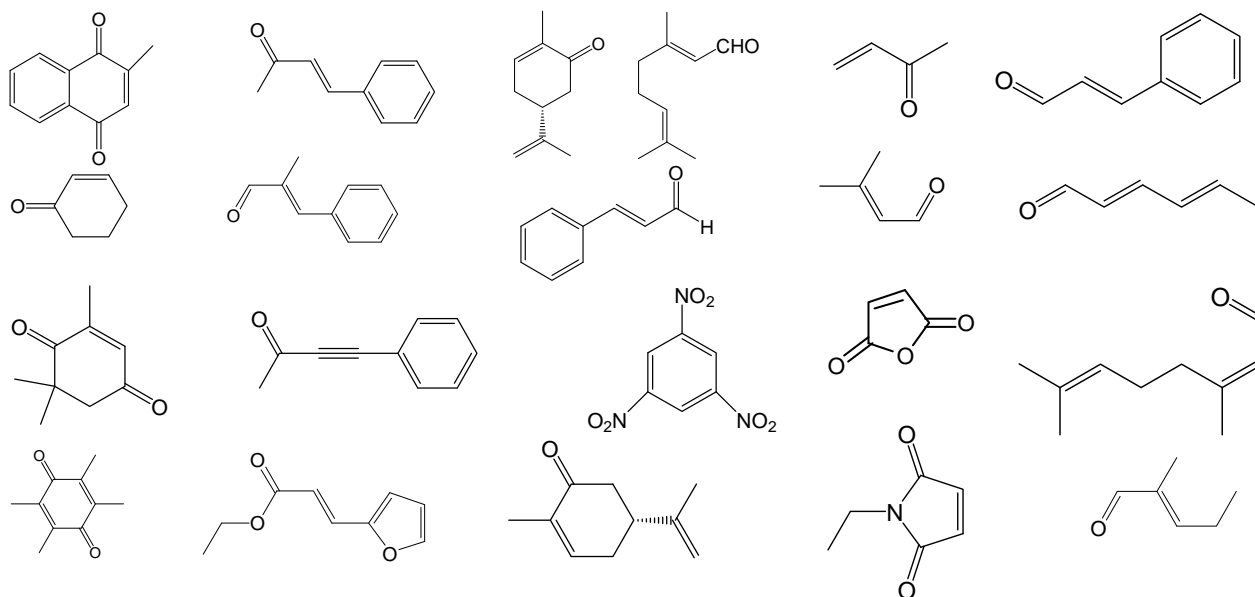
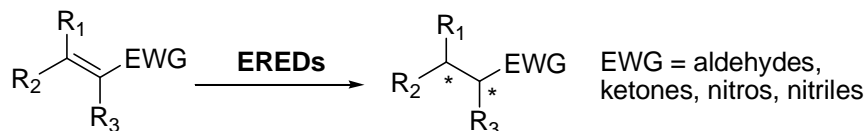
	hydratase	<b>thermostable</b>	1 g \$998
<b>ES-NHT-108</b>	nitrile hydratase	aliphatic and aromatic nitriles	1 g \$998
<b>ES-NHT-109</b>	nitrile hydratase	aliphatic and aromatic nitriles	1 g \$998
<b>ES-NHT-110</b>	nitrile hydratase	aliphatic and aromatic nitriles	1 g \$998
<b>ES-NHT-111</b>	nitrile hydratase	aliphatic and aromatic nitriles	1 g \$998
<b>ES-NHT-112</b>	nitrile hydratase	aliphatic and aromatic nitriles	1 g \$998
<b>ES-NHT-113</b>	nitrile hydratase	broad substrate spectrum, <b>thermostable</b>	1 g \$998
<b>ES-NHT-114</b>	nitrile hydratase	aliphatic and aromatic nitriles, <b>thermostable</b>	1 g \$998
<b>ES-NHT-115</b>	nitrile hydratase	aliphatic and aromatic nitriles, <b>thermostable</b>	1 g \$998
<b>ES-NHT-116</b>	nitrile hydratase	aliphatic and aromatic nitriles	1 g \$998
<b>ES-NHT-117</b>	nitrile hydratase	aliphatic and aromatic nitriles	1 g \$998
<b>ES-NHT-118</b>	nitrile hydratase	aliphatic and aromatic nitriles, <b>thermostable</b>	1 g \$998
<b>ES-NHT-119</b>	nitrile hydratase	aliphatic and aromatic nitriles	1 g \$998
<b>ES-NHT-120</b>	nitrile hydratase	aliphatic and aromatic nitriles, <b>thermostable</b>	1 g \$998
<b>ES-NHT-121</b>	nitrile hydratase	aliphatic and aromatic nitriles, <b>thermostable</b>	1 g \$998
<b>ES-NHT-122</b>	nitrile hydratase	aliphatic and aromatic nitriles, <b>thermostable</b>	1 g \$998
<b>ES-NHT-123</b>	nitrile hydratase	aliphatic and aromatic nitriles	1 g \$998
<b>ES-NHT-124</b>	nitrile hydratase	aliphatic and aromatic nitriles, <b>thermostable</b>	1 g \$998
<b>ES-NHT-2400</b>	<b>a set of twenty-four nitrile hydratases, 50 mg each</b>		\$3,500



<b>ES-ATA-107</b>	$\omega$ -transaminase	ketones, ketoacids and aldehydes	1 g \$998
<b>ES-ATA-108</b>	$\omega$ -transaminase	ketones, ketoacids and aldehydes	1 g \$998
<b>ES-ATA-109</b>	$\omega$ -transaminase	ketones, ketoacids and aldehydes	1 g \$998
<b>ES-ATA-110</b>	$\omega$ -transaminase	ketones, ketoacids and aldehydes	1 g \$998
<b>ES-ATA-111</b>	$\omega$ -transaminase	ketones, ketoacids and aldehydes	1 g \$998
<b>ES-ATA-112</b>	$\omega$ -transaminase	ketones, ketoacids and aldehydes	1 g \$998
<b>ES-ATA-113</b>	$\omega$ -transaminase	ketones, ketoacids and aldehydes	1 g \$998
<b>ES-ATA-114</b>	$\omega$ -transaminase	ketones, ketoacids and aldehydes	1 g \$998
<b>ES-ATA-115</b>	$\omega$ -transaminase	ketones, ketoacids and aldehydes	1 g \$998
<b>ES-ATA-116</b>	$\omega$ -transaminase	ketones, ketoacids and aldehydes	1 g \$998
<b>ES-ATA-117</b>	$\omega$ -transaminase	ketones, ketoacids and aldehydes	1 g \$998
<b>ES-ATA-118</b>	$\omega$ -transaminase	ketones, ketoacids and aldehydes	1 g \$998
<b>ES-ATA-119</b>	$\omega$ -transaminase	ketones, ketoacids and aldehydes	1 g \$998
<b>ES-ATA-120</b>	$\omega$ -transaminase	broad substrate spectrum	1 g \$998
<b>ES-ATA-2000</b>	$\omega$ -transaminase	<b>a set of twenty <math>\omega</math>-transaminases, 50 mg each</b>	\$3,150

## 7. Ene Reductases

This library of ene reductases (ES-ERED) is able to catalyze regio- and stereoselective double bond reduction of  $\alpha$ ,  $\beta$ -unsaturated aldehydes, ketones, nitriles, nitros, and amides.



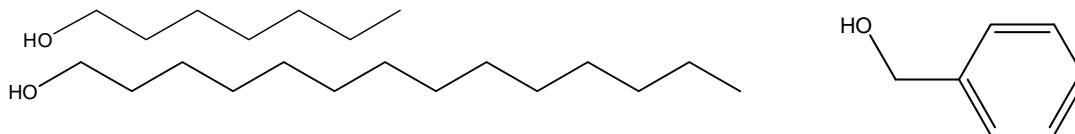
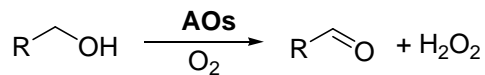
For information on individual enzyme's activity, purity and other specifications, as well as bulk pricing, please contact [services@syncozymes.com](mailto:services@syncozymes.com).

Catalog No.	Product Name	Substrate Spectrum	Prices (US Dollars)
ES-ERED-101	ene reductase	$\alpha$ , $\beta$ -unsaturated aldehydes, ketones, nitriles, nitros, amides	1 g \$998
ES-ERED-102	ene reductase	broad substrate spectrum	1 g \$998
ES-ERED-103	ene reductase	$\alpha$ , $\beta$ -unsaturated aldehydes, ketones, nitriles, nitros, amides	1 g \$998
ES-ERED-104	ene reductase	$\alpha$ , $\beta$ -unsaturated aldehydes, ketones, nitriles, nitros, amides	1 g \$998
ES-ERED-105	ene reductase	$\alpha$ , $\beta$ -unsaturated aldehydes, ketones, nitriles, nitros, amides	1 g \$998
ES-ERED-106	ene reductase	$\alpha$ , $\beta$ -unsaturated aldehydes, ketones, nitriles, nitros, amides	1 g \$998
ES-ERED-107	ene reductase	$\alpha$ , $\beta$ -unsaturated aldehydes, ketones, nitriles, nitros, amides	1 g \$998

<b>ES-ERED-108</b>	ene reductase	$\alpha$ , $\beta$ -unsaturated aldehydes, ketones, nitriles, nitros, amides	1 g \$998
<b>ES-ERED-109</b>	ene reductase	$\alpha$ , $\beta$ -unsaturated aldehydes, ketones, nitriles, nitros, amides	1 g \$998
<b>ES-ERED-110</b>	ene reductase	$\alpha$ , $\beta$ -unsaturated aldehydes, ketones, nitriles, nitros, amides	1 g \$998
<b>ES-ERED-111</b>	ene reductase	broad substrate spectrum	1 g \$998
<b>ES-ERED-112</b>	ene reductase	$\alpha$ , $\beta$ -unsaturated aldehydes, ketones, nitriles, nitros, amides	1 g \$998
<b>ES-ERED-113</b>	ene reductase	$\alpha$ , $\beta$ -unsaturated aldehydes, ketones, nitriles, nitros, amides	1 g \$998
<b>ES-ERED-114</b>	ene reductase	$\alpha$ , $\beta$ -unsaturated aldehydes, ketones, nitriles, nitros, amides	1 g \$998
<b>ES-ERED-115</b>	ene reductase	$\alpha$ , $\beta$ -unsaturated aldehydes, ketones, nitriles, nitros, amides	1 g \$998
<b>ES-ERED-116</b>	ene reductase	$\alpha$ , $\beta$ -unsaturated aldehydes, ketones, nitriles, nitros, amides	1 g \$998
<b>ES-ERED-117</b>	ene reductase	$\alpha$ , $\beta$ -unsaturated aldehydes, ketones, nitriles, nitros, amides	1 g \$998
<b>ES-ERED-118</b>	ene reductase	$\alpha$ , $\beta$ -unsaturated aldehydes, ketones, nitriles, nitros, amides	1 g \$998
<b>ES-ERED-119</b>	ene reductase	$\alpha$ , $\beta$ -unsaturated aldehydes, ketones, nitriles, nitros, amides	1 g \$998
<b>ES-ERED-120</b>	ene reductase	$\alpha$ , $\beta$ -unsaturated aldehydes, ketones, nitriles, nitros, amides	1 g \$998
<b>ES-ERED-121</b>	ene reductase	$\alpha$ , $\beta$ -unsaturated aldehydes, ketones, nitriles, nitros, amides	1 g \$998
<b>ES-ERED-122</b>	ene reductase	$\alpha$ , $\beta$ -unsaturated aldehydes, ketones, nitriles, nitros, amides	1 g \$998
<b>ES-ERED-123</b>	ene reductase	$\alpha$ , $\beta$ -unsaturated aldehydes, ketones, nitriles, nitros, amides	1 g \$998
<b>ES-ERED-2300</b>	a set of twenty-three ene reductases, 50 mg each		\$3,360

## 8. Alcohol Oxidase

The library of alcohol oxidases (EC-AOX) is able to catalyze oxidation of fatty alcohols or aryl-alcohols to form aldehydes or aldehydes.

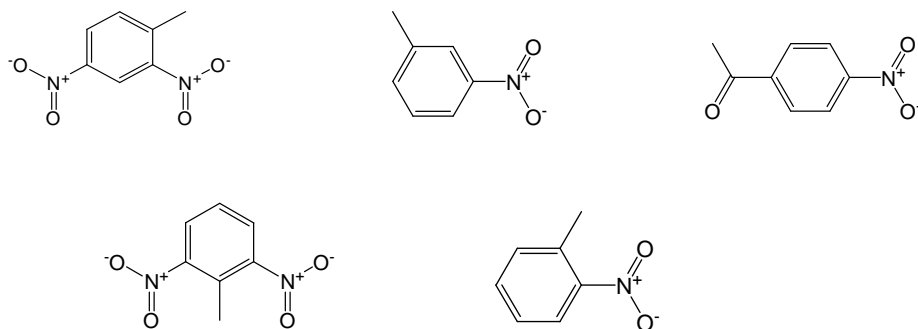


For information on individual enzyme's activity, purity and other specifications, as well as bulk pricing, please contact [services@syncozymes.com](mailto:services@syncozymes.com).

Catalog No.	Product Name	Substrate Spectrum	Prices (US Dollars)
ES-AOX-101	alcohol oxidase	fatty alcohol and aryl-alcohol	1 g \$998
ES-AOX -102	alcohol oxidase	fatty alcohol and aryl-alcohol	1 g \$998
ES-AOX -103	alcohol oxidase	fatty alcohol and aryl-alcohol	1 g \$998
ES-AOX -104	alcohol oxidase	fatty alcohol and aryl-alcohol	1 g \$998
ES-AOX-105	alcohol oxidase	fatty alcohol and aryl-alcohol	1 g \$998
ES-AOX-500	a set of five alcohol oxidases, 50 mg each		\$800

## 9. Nitro Reductases

The library of nitro reductases (ES-NTR) is able to catalyze the synthesis of amines from corresponding nitro compounds.

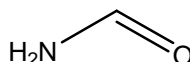
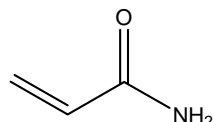
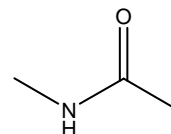
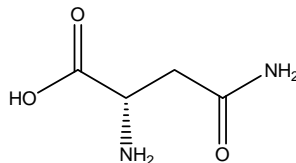
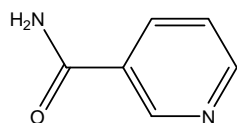
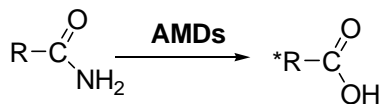


For information on individual enzyme's activity, purity and other specifications, as well as bulk pricing, please contact [services@syncozymes.com](mailto:services@syncozymes.com).

Catalog No.	Product Name	Substrate Spectrum	Prices (US Dollars)
ES-NTR-101	nitro reductase	aromatic nitro compounds	1 g \$998
ES-NTR-102	nitro reductase	aromatic nitro compounds	1 g \$998
ES-NTR-103	nitro reductase	aromatic nitro compounds	1 g \$998
ES-NTR-104	nitro reductase	aromatic nitro compounds	1 g \$998
ES-NTR-105	nitro reductase	aromatic nitro compounds	1 g \$998
ES-NTR-106	nitro reductase	aromatic nitro compounds	1 g \$998
ES-NTR-107	nitro reductase	aromatic nitro compounds	1 g \$998
ES-NTR-108	nitro reductase	aromatic nitro compounds	1 g \$998
ES-NTR-109	nitro reductase	aromatic nitro compounds	1 g \$998
ES-NTR-110	nitro reductase	aromatic nitro compounds	1 g \$998
ES-NTR-111	nitro reductase	aromatic nitro compounds	1 g \$998
ES-NTR-112	nitro reductase	aromatic nitro compounds	1 g \$998
ES-NTR-1200	a set of twelve nitro reductases, 50 mg each		\$1,900

## 10. Amidases

The library of amidases (ES-AMD) is able to catalyze regio- and stereoselective synthesis of chiral carboxylic acids and their derivatives from a variety of aliphatic and aromatic amides.



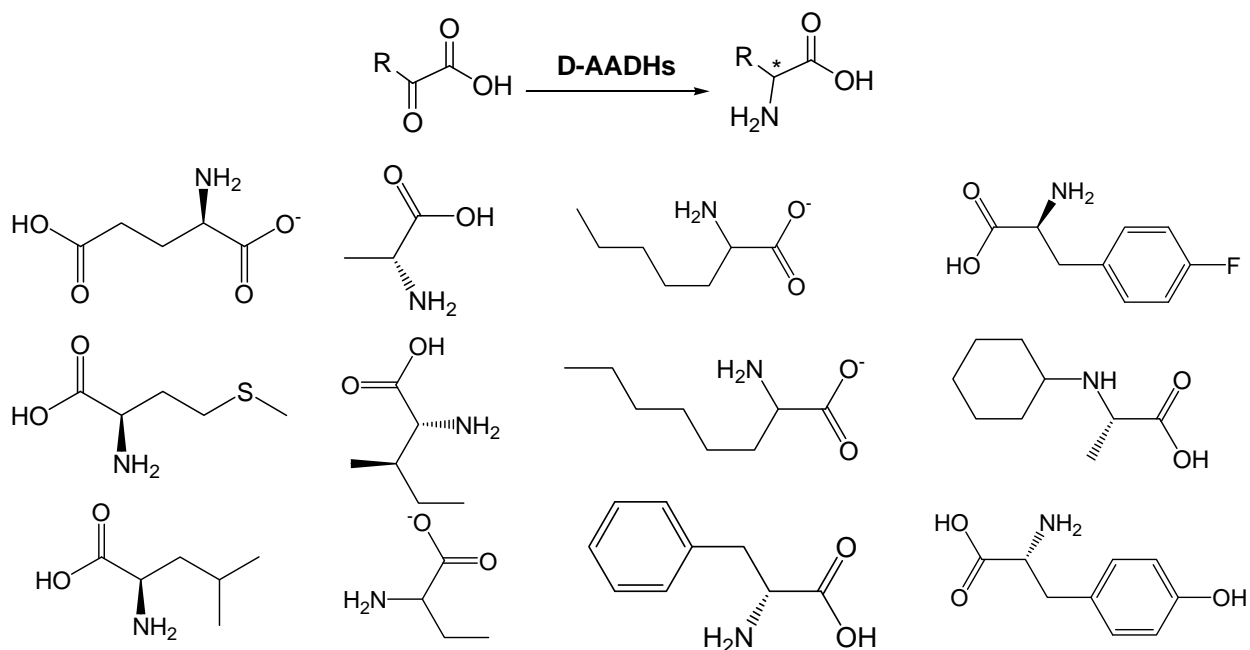
For information on individual enzyme's activity, purity and other specifications, as well as bulk pricing, please contact [services@syncozymes.com](mailto:services@syncozymes.com).

Catalog No.	Product Name	Substrate Spectrum	Prices (US Dollars)
ES-AMD-101	amidase	aliphatic and aromatic amides	1 g \$998
ES-AMD-102	amidase	aliphatic and aromatic amides	1 g \$998
ES-AMD-103	amidase	aliphatic and aromatic amides	1 g \$998
ES-AMD-104	amidase	aliphatic and aromatic amides	1 g \$998
ES-AMD-105	amidase	aliphatic and aromatic amides	1 g \$998
ES-AMD-106	amidase	aliphatic and aromatic amides	1 g \$998
ES-AMD-107	amidase	aliphatic and aromatic amides	1 g \$998
ES-AMD-108	amidase	aliphatic and aromatic amides	1 g \$998
ES-AMD-109	amidase	aliphatic and aromatic amides	1 g \$998
ES-AMD-110	amidase	aliphatic and aromatic amides	1 g \$998
ES-AMD-111	amidase	aliphatic and aromatic amides	1 g \$998
ES-AMD-112	amidase	aliphatic and aromatic amides	1 g \$998

			1 g \$998
<b>ES-AMD-113</b>	amidase	aliphatic and aromatic amides	1 g \$998
<b>ES-AMD-114</b>	amidase	aliphatic and aromatic amides	1 g \$998
<b>ES-AMD-115</b>	amidase	aliphatic and aromatic amides	1 g \$998
<b>ES-AMD-116</b>	amidase	aliphatic and aromatic amides	1 g \$998
<b>ES-AMD-1600</b>	<b>a set of sixteen amidases, 50 mg each</b>		\$2,500

## 11. D-Amino Acid Dehydrogenase

The library of D-amino acid dehydrogenases (D-AADH) is able to catalyze regio- and stereoselective synthesis of D-amino acids from corresponding 2-keto acids with ammonia.

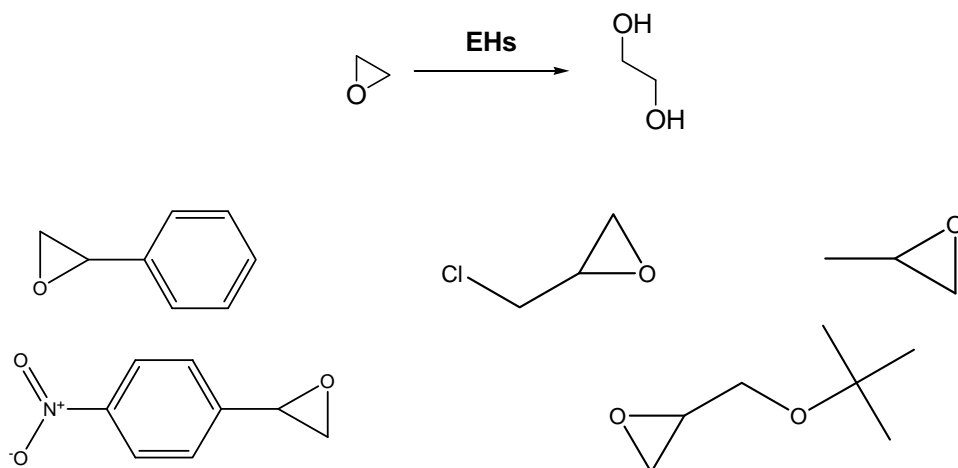


For information on individual enzyme's activity, purity and other specifications, as well as bulk pricing, please contact [services@syncozymes.com](mailto:services@syncozymes.com).

Catalog No.	Product Name	Substrate Spectrum	Prices (US Dollars)
ES- D-AADH -101	D-amino acid dehydrogenase	2-keto acids	1 g \$998
ES- D-AADH -102	D-amino acid dehydrogenase	2-keto acids	1 g \$998
ES- D-AADH -103	D-amino acid dehydrogenase	2-keto acids	1 g \$998
ES- D-AADH -104	D-amino acid dehydrogenase	2-keto acids	1 g \$998
ES- D-AADH -105	D-amino acid dehydrogenase	2-keto acids	1 g \$998
ES- D-AADH -106	D-amino acid dehydrogenase	2-keto acids	1 g \$998
ES- D-AADH -107	D-amino acid dehydrogenase	2-keto acids	1 g \$998
ES- D-AADH -700	a set of seven D-amino acid dehydrogenase, 50 mg each		\$1,100

## 12. Epoxide Hydrolases

The library of epoxide hydrolases (ES-EH) is able to catalyze the synthesis of chiral alcohols through stereoselective hydrolysis of aliphatic and aromatic epoxides, such as

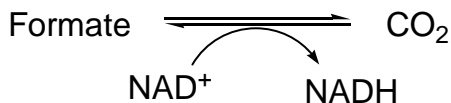


For information on individual enzyme's activity, purity and other specifications, as well as bulk pricing, please contact [services@syncozymes.com](mailto:services@syncozymes.com).

Catalog No.	Product Name	Substrate Spectrum	Prices (US Dollars)
ES-EH-101	epoxide hydrolase	aliphatic and aromatic epoxide	1 g \$998
ES-EH-102	epoxide hydrolase	aliphatic and aromatic epoxide	1 g \$998
ES-EH-200	a set of two epoxide hydrolases, 50 mg each		\$420

### 13. Formate Dehydrogenases

The library of formate dehydrogenases is used for recycling NADH with ammonium formate or formic acid as the reducing agent.

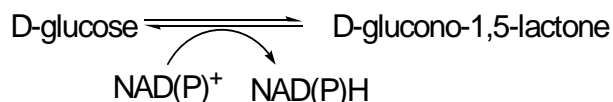


For information on individual enzyme's activity, purity and other specifications, as well as bulk pricing, please contact [services@syncozymes.com](mailto:services@syncozymes.com).

Catalog No.	Product Name	Substrate Spectrum	Prices (US Dollars)
ES-FDH-101	formate dehydrogenase	ammonium formate , formic acid	1 g \$998
ES-FDH-102	formate dehydrogenase	ammonium formate, formic acid	1 g \$998
ES-FDH-103	formate dehydrogenase	ammonium formate, formic acid	1 g \$998
ES-FDH-300	formate dehydrogenase	<b>a set of three formate dehydrogenases, 50 mg each</b>	\$500

### 14. Glucose Dehydrogenases

The library of glucose dehydrogenases is used for recycling NADH and NADPH with glucose as the reducing agent.



For information on individual enzyme's activity, purity and other specifications, as well as bulk pricing, please contact [services@syncozymes.com](mailto:services@syncozymes.com).

Catalog No.	Product Name	Substrate Spectrum	Prices (US Dollars)
ES-GDH-101	glucose dehydrogenase	glucose	1 g \$998
ES-GDH-102	glucose dehydrogenase	glucose	1 g \$998
ES-GDH-103	glucose dehydrogenase	glucose	1 g \$998
ES-GDH-104	glucose dehydrogenase	glucose	1 g \$998
ES-GDH-400	<b>a set of four glucose dehydrogenases, 50 mg each</b>		\$630

<b>15. Glycosidases</b>			
<b>Catalog No.</b>	<b>Product Name</b>	<b>Sources/Substrates</b>	<b>Prices (US Dollars)</b>
ES-CARH-301	$\alpha$ -amylase	starch, 4000 U/g	250 g \$45
ES-CARH-302	$\beta$ -amylase	starch, 500 U/mg	25 g \$66
ES-CARH-303	cellulase	cellulose, 400 U/mg	10 g \$30
ES-CARH-304	xylanase	xylan, 60 KU/mg	5 g \$60
ES-CARH-305	$\beta$ -glucosidase	such as p-nitrophenyl $\beta$ -D-glucopyranoside, 600 U/g	50 mg \$150

<b>16. Hydrolases</b>			
<b>Catalog No.</b>	<b>Product Name</b>	<b>Sources</b>	<b>Prices (US Dollars)</b>
ES-PLE-101	Pig liver esterase	p-nitrophenyl acetate, ethyl butyrate	1 g \$998
ES-PLE-102	Pig liver esterase	p-nitrophenyl acetate, ethyl butyrate	1 g \$998
ES-PLE-103	Pig liver esterase	p-nitrophenyl acetate, ethyl butyrate	1 g \$998
ES-PLE-104	Pig liver esterase	p-nitrophenyl acetate, ethyl butyrate	1 g \$998
ES-PLE-105	Pig liver esterase	p-nitrophenyl acetate, ethyl butyrate	1 g \$998
ES-PLE-106	Pig liver esterase	p-nitrophenyl acetate, ethyl butyrate	1 g \$998
ES-PLE-600	<b>a set of six Pig liver esterase, 50 mg each</b>		\$980
ES-HLE-301	lipase	Porcine pancreatic	5 g \$42
ES-HLE-302	protease	Bovine pancreatic	25 g \$84
ES-HLE-303	protease	Porcine gastric	5 g \$52
ES-HLE-304	protease	Papain	25 g \$84
ES-HLE-305	protease	<i>Ananas comosus</i>	5 g \$73
ES-HLE-307	protease	Acidic	250 g \$105
ES-HLE-308	protease	Neutral	250 g \$105
ES-HLE-309	amidase	Penicillin acylase I, immobilized	1 KU \$52
ES-HLE-310	amidase	Penicillin acylase II, immobilized	1 KU \$105
ES-HLE-201	lipase	Microbial	50 mg \$105; 1 g \$525
ES-HLE-202	lipase	Microbial	50 mg \$105; 1 g \$525
ES-HLE-203	lipase	Microbial	50 mg \$105; 1 g \$525
ES-HLE-204	lactonase	Microbial	50 mg \$105;

			1 g \$525
<b>CV-CALBY</b>	lipase	<i>Candida antarctica</i>	10 g \$120; 100 g \$400
<b>CV-CALAY</b>	lipase	<i>Candida antarctica</i>	1g \$160; 5 g \$400
<b>CV-CRL1</b>	lipase	<i>Candida rugosa</i>	1 g \$320
<b>CV-P6L</b>	protease	<i>Bacillus licheniformis</i>	50 ml \$120; 250 ml \$200
<b>CV-P8L</b>	protease	<i>Bacillus licheniformis</i>	50 ml \$120; 250 ml \$200
<b>CV-P7L</b>	protease	<i>Bacillus amyloliquefaciens</i>	50 ml \$120; 250 ml \$200
<b>CV-P13FL</b>	protease	<i>Aspergillus niger</i>	50 ml \$120; 250 ml \$200
<b>CV-P14L</b>	protease	Thermolysin ( <i>Geobacillus sp.</i> )	50 ml \$120; 250 ml \$200
<b>CV-P15L</b>	protease	<i>Trichoderma reesei</i>	50 ml \$120; 250 ml \$200
<b>CV-P30L</b>	protease	<i>Bacillus subtilis</i>	50 ml \$120; 250 ml \$200
<b>CV-P40L</b>	protease	<i>Bacillus subtilis</i>	50 ml \$120; 250 ml \$200
<b>CV-P40XL</b>	protease	<i>Bacillus subtilis</i>	50 ml \$120; 250 ml \$200
<b>CV-P50FP</b>	protease	<i>Aspergillus oryzae var.</i>	50 ml \$120; 250 ml \$200
<b>CV-P51FP</b>	protease	<i>Aspergillus oryzae var.</i>	50 ml \$120; 250 ml \$200
<b>CV-P89L</b>	protease	<i>Bacillus subtilis</i>	50 ml \$120; 250 ml \$200



Catalog No.	Product Name	Substrate Spectrum	Prices (US Dollars)
ES-HNL-101	(S)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes, ketones, thermostable	1 g \$998
ES-HNL-102	(S)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes, ketones, thermostable	1 g \$998
ES-HNL-103	(S)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes, ketones, thermostable	1 g \$998
ES-HNL-104	(S)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes, ketones, thermostable	1 g \$998
ES-HNL-105	(S)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes, ketones, thermostable	1 g \$998
ES-HNL-106	(S)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes, ketones, thermostable	1 g \$998
ES-HNL-107	(S)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes, ketones	1 g \$998
ES-HNL-108	(S)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes, ketones	1 g \$998
ES-HNL-109	(S)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes, ketones	1 g \$998
ES-HNL-110	(S)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes, ketones	1 g \$998
ES-HNL-111	(S)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes, ketones	1 g \$998
ES-HNL-112	(S)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes, ketones	1 g \$998
ES-HNL-113	(S)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes, ketones	1 g \$998
ES-HNL-114	(S)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes, ketones	1 g \$998
ES-HNL-115	(S)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes, ketones	1 g \$998
ES-HNL-116	(S)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes, ketones	1 g \$998
ES-HNL-117	(S)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes, ketones	1 g \$998
ES-HNL-118	(S)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes, ketones	1 g \$998
<b>ES-HNL-1800</b>	(S)-oxynitrilase	a set of eighteen (S)-oxynitrilases, 50 mg each	\$2,800
ES-HNL-119	(R)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes, ketones	5 KU \$315; 50 KU \$998
ES-HNL-120	(R)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes	5 KU \$315; 50 KU \$998
ES-HNL-121	(R)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes	5 KU \$315; 50 KU \$998

ES-HNL-122	(R)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes	1 g \$998
ES-HNL-123	(R)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes	1 g \$998
ES-HNL-124	(R)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes	1 g \$998
ES-HNL-125	(R)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes	1 g \$998
ES-HNL-126	(R)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes	1 g \$998
ES-HNL-127	(R)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes	1 g \$998
ES-HNL-128	(R)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes	1 g \$998
ES-HNL-129	(R)-oxynitrilase	aromatic, aliphatic and heterocyclic aldehydes	1 g \$998
ES-HNL-1100	a set of eleven (R)-oxynitrilases, 5 KU or 50 mg each		\$1,750

## 18. Immobilized Lipases

(Particle size = 150-300 µm, T1 = absorbed & dry, T2 = covalent & dry, T3 = covalent & wet)

Catalog No.	Product Name	Sources/Substrates	Prices (US Dollars)
IMMCALA-T2-150	lipase	<i>Candida antarctica A</i>	5g \$160; 100 g \$400
IMMCALB-T1-1500	lipase	<i>Candida antarctica B</i>	5g \$160; 100 g \$400
IMMCALB-T2-150	lipase	<i>Candida antarctica B</i>	5g \$160; 100 g \$400
IMMCALBY-T1-1500	lipase	<i>Candida antarctica B</i>	5g \$160; 100 g \$400
IMMCALBY-T2-150	lipase	<i>Candida antarctica B</i>	5g \$160; 100 g \$400
IMMRML-T2-150	lipase	<i>Rhizomucor miehei</i>	5g \$160; 100 g \$400
IMMCRL-T2-150	lipase	<i>Candida rugosa</i>	5g \$160; 100 g \$400
IMMTLL-T1-1500	lipase	<i>Thermomyces lanuginosa</i>	5g \$160; 100 g \$400
IMMTLL-T2-150	lipase	<i>Thermomyces lanuginosa</i>	5g \$160; 100 g \$400
IMMCCL-T2-150	lipase	<i>Candida cylindracea</i>	5g \$160; 100 g \$400
IMMABC-T2-150	lipase	<i>Pseudomonas cepacia</i>	5g \$160; 100 g \$400
IMMAPF-T2-150	lipase	<i>Pseudomonas fluorescens</i>	5g \$160; 100 g \$400
IMMARO-T2-150	lipase	<i>Rhizopus oryzae</i>	5g \$160; 100 g \$400

<b>IMMCALAY-T2-150</b>	lipase	<i>Candida antarctica A</i>	1g \$160
<b>IMMCRL1-T2-150</b>	lipase	<i>Candida rugosa</i>	1g \$160
<b>IMMAMJ-T2-150</b>	lipase	<i>Mucor javanicus</i>	5g \$160; 100 g \$400
<b>IMMANF-T2-150</b>	lipase	<i>Aspergillus niger</i>	1g \$160
<b>IMMANA-T2-150</b>	lipase	<i>Aspergillus niger</i>	1g \$160
<b>IMMRNA-T2-150</b>	lipase	<i>Rhizopus niveus</i>	1g \$160
<b>IMMASMQ-T2-150</b>	lipase	<i>Alcaligenes sp.</i>	1g \$160
<b>IMMASMP-T2-150</b>	lipase	<i>Alcaligenes sp.</i>	1g \$160
<b>IMMRES-T2-150</b>	lipase	Resinase HT	1g \$160
<b>IMMLIPX-T2-150</b>	lipase	Lipex 100L	1g \$160
<b>IMML51-T2-150</b>	lipase		1g \$160
<b>IMMCCMO-T2-150</b>	lipase	<i>Candida cylindracea sp.</i>	1g \$160
<b>IMMCCMM-T2-150</b>	lipase	<i>Candida cylindracea sp.</i>	1g \$160
<b>IMMAULI-T2-150</b>	lipase	<i>Bacillus subtilis</i>	5g \$160; 100 g \$400
<b>IMMCALA-T3-150</b>	lipase	<i>Candida antarctica A</i>	10g \$160; 200 g \$320
<b>IMMCALB-T3-150</b>	lipase	<i>Candida antarctica B</i>	10g \$160; 200 g \$320
<b>IMMCALBY-T3-150</b>	lipase	<i>Candida antarctica B</i>	10g \$160; 200 g \$320
<b>IMMRML-T3-150</b>	lipase	<i>Rhizomucor miehei</i>	10g \$160; 200 g \$320
<b>IMMCRL-T3-150</b>	lipase	<i>Candida rugosa</i>	10g \$160; 200 g \$320
<b>IMMTLL-T3-150</b>	lipase	<i>Thermomyces lanuginosa</i>	10g \$160; 200 g \$320
<b>IMMCCL-T3-150</b>	lipase	<i>Candida cylindracea</i>	10g \$160; 200 g \$320
<b>IMMABC-T3-150</b>	lipase	<i>Pseudomonas cepacia</i>	10g \$160; 200 g \$320
<b>IMMAPF-T3-150</b>	lipase	<i>Pseudomonas fluorescens</i>	10g \$160; 200 g \$320
<b>IMMARO-T3-150</b>	lipase	<i>Rhizopus oryzae</i>	10g \$160; 200 g \$320

## 19. Immobilized Phospholipases

(Particle size = 150-300  $\mu\text{m}$ , T1 = absorbed & dry, T2 = covalent & dry, T3 = covalent & wet)

Catalog No.	Product Name	Sources/Substrates	Prices (US Dollars)
IMMLMPL-T2-150	phospholipase	LysoMax	5g \$160; 100 g \$400
IMMGZPL-T2-150	phospholipase	G-Zyme G999	5g \$160; 100 g \$400
IMMLEPL-T2-150	phospholipase	Lecitase ultra	5g \$160; 100 g \$400

## 20. Immobilized Proteases

(Particle size = 150-300  $\mu\text{m}$ , T1 = absorbed & dry, T2 = covalent & dry, T3 = covalent & wet)

Catalog No.	Product Name	Sources/Substrates	Prices (US Dollars)
IMMALC-T2-150	protease	Subtilisin ( <i>Bacillus sp.</i> )	5g \$160; 100 g \$400
IMMSAV-T2-150	protease	Subtilisin ( <i>Bacillus sp.</i> )	5g \$160; 100 g \$400
IMMEVE-T2-150	protease	Subtilisin ( <i>Bacillus sp.</i> )	5g \$160; 100 g \$400
IMMESP-T2-150	protease	Subtilisin ( <i>Bacillus sp.</i> )	5g \$160; 100 g \$400
IMMP6-T2-150	protease	<i>Bacillus licheniformis</i>	5g \$160; 100 g \$400
IMMP30-T2-150	protease	<i>Bacillus subtilis</i>	5g \$160; 100 g \$400
IMMP40L-T2-150	protease	<i>Bacillus subtilis</i>	5g \$160; 100 g \$400
IMMP51-T2-150	protease	<i>Aspergillus oryzae</i>	5g \$160; 100 g \$400
IMMP89-T2-150	protease	<i>Bacillus subtilis</i>	5g \$160; 100 g \$400
IMMCAR-T2-150	protease	<i>Mucor miehei</i>	5g \$160; 100 g \$400
IMMP7-T2-150	protease	<i>Bacillus amyloliquefaciens</i>	5g \$160; 100 g \$400
IMMP14-T2-150	protease	Thermolysin ( <i>Geobacillus sp.</i> )	5g \$160; 100 g \$400
IMMP15-T2-150	protease	<i>Trichoderma reesei</i>	5g \$160; 100 g \$400
IMMP50-T2-150	protease	<i>Aspergillus oryzae var.</i>	5g \$160; 100 g \$400
IMMAUAC-T2-150	protease	<i>Aspergillus niger</i>	5g \$160; 100 g \$400
IMMAUNE-T2-150	protease	<i>Bacillus subtilis</i>	5g \$160; 100 g \$400
IMMAUAL-T2-150	protease	<i>Bacillus subtilis</i>	5g \$160; 100 g \$400

<b>IMMPAP-T2-150</b>	protease	<i>Carica papaya</i>	5g \$160; 25 g \$320
<b>IMMBRO-T2-150</b>	protease	Pineapple stem	5g \$160; 25 g \$320
<b>IMMFIC-T2-150</b>	protease	Fig tree latex	5g \$160; 25 g \$320

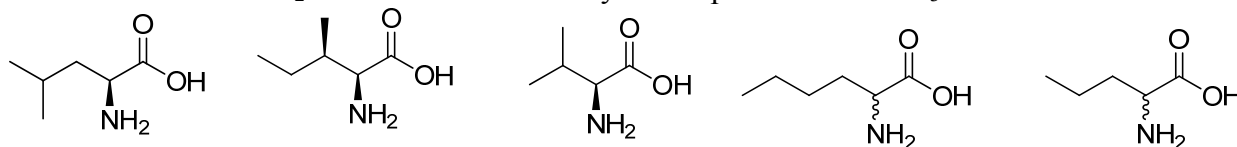
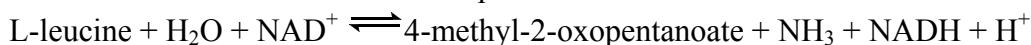
## 21. Other Immobilized Enzymes

(Particle size = 150-300 μm, T1 = absorbed & dry, T2 = covalent & dry, T3 = covalent & wet)

Catalog No.	Product Name	Sources/Substrates	Prices (US Dollars)
<b>IMMROXY-T3-150</b>	(R)-oxynitrilase	Almonds	Inquire
<b>IMMNeuAc-T3-150</b>	N-acetylneuraminic acid aldolase		Inquire
<b>IMMPenGA-T3-150</b>	Penicillin G amidase	<i>E. coli</i>	Inquire
<b>IMMADH-T3-150</b>	Alcohol dehydrogenase	Various	Inquire
<b>IMMKRED-T3-150</b>	Ketoreductase	Various	Inquire

## 22. Leucine dehydrogenase

This enzyme belongs to the family of oxidoreductases, specifically those acting on the CH-NH<sub>2</sub> group of donors with NAD<sup>+</sup> or NADP<sup>+</sup> as acceptor.

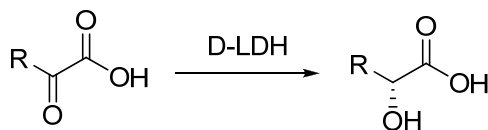


For information on individual enzyme's activity, purity and other specifications, as well as bulk pricing, please contact [services@syncozymes.com](mailto:services@syncozymes.com).

Catalog No.	Product Name	Substrate Spectrum	Prices (US Dollars)
<b>ES-LeuDh-101</b>	Leucine dehydrogenase	Leucine, etc.	1 g \$998

### 23. Lactate dehydrogenase

This lactate dehydrogenase catalyze the production of a number of 2-hydroxy acids from 2-keto acids.



For information on individual enzyme's activity, purity and other specifications, as well as bulk pricing, please contact [services@syncozymes.com](mailto:services@syncozymes.com).

Catalog No.	Product Name	Substrate Spectrum	Prices (US Dollars)
ES-LDH-101	D- Lactate dehydrogenase	D-lactate	1 g \$998

### 24. Nicotinamide Mononucleotide Adenylyltransferase

Nicotinamide mononucleotide adenylyltransferase (EC 2.7.7.1) catalyzes the following reaction:

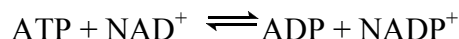


For information on individual enzyme's activity, purity and other specifications, as well as bulk pricing, please contact [services@syncozymes.com](mailto:services@syncozymes.com).

Catalog No.	Product Name	Substrate Spectrum	Prices (US Dollars)
ES-NMNAT-101	nicotinamide mononucleotide adenylyltransferase	nicotinamide ribonucleotide (thermostable)	1 g \$998

### 25. NAD Kinase

NAD<sup>+</sup> kinase (EC 2.7.1.23, NADK) converts nicotinamide adenine dinucleotide (NAD<sup>+</sup>) into NADP<sup>+</sup>:



For information on individual enzyme's activity, purity and other specifications, as well as bulk pricing, please contact [services@syncozymes.com](mailto:services@syncozymes.com).

Catalog No.	Product Name	Substrate Spectrum	Prices (US Dollars)
ES-NADK-101	NAD Kinase	NAD <sup>+</sup>	1 g \$998

#### Notes:

1. Syncozymes provides a wide range of cost-effective and high quality contract services for enzyme R&D, fermentation, biotransformations and chemical process development.
2. The catalog products are used solely for their intended purpose as biocatalysts, and shall not be manipulated either biologically or chemically without priori notice or agreement with Syncozymes.