Strem Chemicals, Inc.

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Catalog # 07-6318 N-[3,5-Bis(trifluoromethyl)phenyl]-N'-[(1R,2R)-2-(1-piperidinyl)cyclohexyl]thiourea

Technical Notes:

1. **Conjugate Addition:** Organocatalytic conjugate addition of malononitrile to conformationally restricted dienones has been studied. A series of chiral primary and tertiary amine catalysts were screened.

$$R^{1} + NC R^{2}$$

$$R^{2} = CN, COOEt$$

$$Catalyst (10 mol\%)$$

$$toluene, rt$$

$$R^{2} = CN, COOEt$$

$$Catalyst (10 mol\%)$$

$$R^{1} + R^{2}$$

$$R^{2} = CN, COOEt$$

$$R^{2} = CN, COOEt$$

$$R^{2} = CN, COOEt$$

$$R^{3} = CN, COOEt$$

$$R^{2} = CN, COOEt$$

$$R^{3} = CN, COOEt$$

$$R^{4} = CN, COOEt$$

$$R^{2} = CN, COOEt$$

$$R^{3} = CN, COOEt$$

$$R^{4} = CN, COOEt$$

$$R^{5} = CN, COOEt$$

References:

1. Tetrahedron Lett., 2011, 76, 3797-3804.