The nuclear retinoic acid receptors (RARs) are transcriptional transregulators, which control the expression of specific gene subsets subsequently to ligand binding and to strictly controlled phosphorylation processes. RARs consist of three subtypes, α (NR1B1), β (NR1B2) and γ (NR1B3), encoded by separate genes. RARs function as ligand-dependent transcriptional regulators, heterodimerized with retinoid X receptors (RXRs), which also consist of three types, α NR2B1, β (NR2B2) and γ (NR2B3). RARs play critical roles in a variety of biological processes, including development, reproduction, immunity, organogenesis and homeostasis, as assessed by vitamin A-deficiency (VAD), pharmacological and genetic studies conducted in the mouse.

Retinoid X receptor (RXR) belongs to a family of ligand-activated transcription factors that regulate many aspects of metazoan life. A class of nuclear receptors requires RXR as heterodimerization partner for their function.
### RAR/RXR Inhibitors, Agonists & Antagonists

#### (+)-Talarozole

Cat. No.: HY-14802C

(+)-Talarozole is a potent inhibitor of retinoic acid metabolism extracted from patent WO 1997049704 A1.

- **Purity:** 99.28%
- **Clinical Data:** No Development Reported
- **Size:** 10 mM × 1 mL, 1 mg, 5 mg, 10 mg, 25 mg, 50 mg

#### AC-261066

Cat. No.: HY-108532

AC-261066 is a potent, orally available and isoform-selective retinoic acid beta2 (RARβ2) receptor agonist, with a pEC\textsubscript{50} of 8.0.

- **Purity:** >98%
- **Clinical Data:** No Development Reported
- **Size:** 1 mg, 5 mg

#### Acitretin (Ro 10-1670)

Cat. No.: HY-80107

Acitretin (Ro 10-1670) is a second-generation, systemic retinoid that has been used in the treatment of psoriasis. Target: RAR/RXR. Acitretin is a second-generation, systemic retinoid that has been approved for the treatment of psoriasis since 1997.

- **Purity:** 99.79%
- **Clinical Data:** Launched
- **Size:** 10 mM × 1 mL, 100 mg, 200 mg, 500 mg

#### Adapalene (CD271)

Cat. No.: HY-80091

Adapalene (CD271; Differin), a synthetic retinoid, is a retinoic acid receptor agonist (RAR).

- **Purity:** >98.0%
- **Clinical Data:** Launched
- **Size:** 10 mM × 1 mL, 50 mg, 100 mg, 500 mg

#### AGN 193109

Cat. No.: HY-U00449

AGN 193109 is a retinoid analog, and acts as a specific and highly effective antagonist of retinoic acid receptors (RARs), with K\textsubscript{d} of 2 nM, 2 nM, and 3 nM for RAR\textalpha, RAR\textbeta, and RAR\textgamma, respectively.

- **Purity:** 99.43%
- **Clinical Data:** No Development Reported
- **Size:** 5 mg, 10 mg, 25 mg

#### AGN 194078

Cat. No.: HY-100273

AGN 194078 is a selective RAR\textalpha agonist with a K\textsubscript{d} and EC\textsubscript{50} of 3 and 112 nM, respectively.

- **Purity:** >98%
- **Clinical Data:** No Development Reported
- **Size:** 1 mg, 5 mg, 10 mg

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**Contact Information:**

Tel: 609-228-6898  Fax: 609-228-5909  Email: sales@MedChemExpress.com
AGN 194310 (VTP-194310)
Cat. No.: HY-16681
AGN 194310 (VTP-194310) is a high affinity, potent and selective retinoic acid receptors (RARs) pan-antagonist with Kᵩ values of 3 nM, 2 nM, 5 nM for RARα, RARβ, RARγ, respectively.

Purity: 98.02%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 1 mg, 5 mg, 10 mg, 25 mg, 50 mg

AGN 195183
Cat. No.: HY-16684
AGN 195183 is a potent and selective agonist of RARα (Kᵩ = 3 nM) with improved binding selectivity relative to AGN 193836; no activity on RARβ/γ. IC₅₀ value: 3 nM (Kᵩ); 200 nM (EC₈₀), RAR Trans.

Purity: 98.40%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg

AGN 196996
Cat. No.: HY-16682
AGN 196996 is a potent and selective RARα antagonist with Ki value of 2 nM; little binding affinity for RARβ (Ki = 1087 nM) and RARγ (Ki = 8523 nM).

Purity: >98%
Clinical Data: No Development Reported
Size: 100 mg, 250 mg, 500 mg

AGN 205327
Cat. No.: HY-16685
AGN 205327 is a potent synthetic RARs agonist with EC₅₀ of 3766/734/32 nM for RARα/β/γ Target: RAR agonist.

Purity: >98%
Clinical Data: No Development Reported
Size: 5 mg, 10 mg

AM580 (CD336; NSC608001; Ro 40-6055)
Cat. No.: HY-10475
AM580 is a selective RARα agonist with IC₅₀ of 8 nM and 0.36 nM, respectively.

Purity: 99.46%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg

Bexarotene (LGD1069)
Cat. No.: HY-14171
Bexarotene (LGD1069) is a selective retinoid X receptors (RXR) agonist for the treatment of cutaneous T-cell lymphoma.

Purity: 99.90%
Clinical Data: Launched
Size: 10 mM × 1 mL, 50 mg, 100 mg, 500 mg

Bexarotene D4 (LGD1069 D4)
Cat. No.: HY-14171S
Bexarotene D4 is a deuterium labeled Bexarotene (LGD1069). Bexarotene (LGD1069) is a selective retinoid X receptors (RXR) agonist for the treatment of cutaneous T-cell lymphoma.

Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg

BMS493
Cat. No.: HY-108529
BMS493 is an inverse pan-RARs agonist. BMS493 increases nuclear corepressor interaction with RARs. BMS493 also could prevent retinoic acid-induced differentiation.

Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg
<table>
<thead>
<tr>
<th><strong>CD2665</strong></th>
<th><strong>Cat. No.: HY-107437</strong></th>
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<tbody>
<tr>
<td>CD2665 is a selective RAR-beta/gamma antagonist, with ( K_i ) values of 110 nM, 306 nM for RAR ( \gamma ) and RAR ( \beta ), respectively.</td>
<td></td>
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<tr>
<td><strong>Purity:</strong> &gt;98%</td>
<td></td>
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<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
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<tr>
<td><strong>Size:</strong> 1 mg, 5 mg</td>
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<thead>
<tr>
<th><strong>CD3254</strong></th>
<th><strong>Cat. No.: HY-107399</strong></th>
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</thead>
<tbody>
<tr>
<td>CD3254 a potent and selective retinoid-X-receptor (RXR) agonist.</td>
<td></td>
</tr>
<tr>
<td><strong>Purity:</strong> &gt;98%</td>
<td></td>
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<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 1 mg, 5 mg</td>
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<table>
<thead>
<tr>
<th><strong>CD437</strong> (AHPN)</th>
<th><strong>Cat. No.: HY-100532</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>CD437 is a selective Retinoic Acid Receptor ( \gamma ) (RAR ( \gamma )) agonist.</td>
<td></td>
</tr>
<tr>
<td><strong>Purity:</strong> &gt;98.0%</td>
<td></td>
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<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 10 mM × 1 mL, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg</td>
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<table>
<thead>
<tr>
<th><strong>Ch55-O-C3-NH2</strong> (RAR ligand 1)</th>
<th><strong>Cat. No.: HY-111843</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ch55-O-C3-NH2 (RAR ligand 1) is a Ch 55-based ligand, which targets RAR. Ch55-O-C3-NH2 (RAR ligand 1) binds to cIAP1 ligand Bestatin via a linker to form SNIPER.</td>
<td></td>
</tr>
<tr>
<td><strong>Purity:</strong> &gt;98%</td>
<td></td>
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<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 500 mg</td>
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<table>
<thead>
<tr>
<th><strong>Fenretinide</strong> (4-HPR)</th>
<th><strong>Cat. No.: HY-15373</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fenretinide (4-HPR) is a synthetic retinoid derivative, binding to the retinoic acid receptors (RAR) at concentrations necessary to induce cell death.</td>
<td></td>
</tr>
<tr>
<td><strong>Purity:</strong> 99.41%</td>
<td></td>
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<tr>
<td><strong>Clinical Data:</strong> Phase 3</td>
<td></td>
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<tr>
<td><strong>Size:</strong> 10 mM × 1 mL, 10 mg, 50 mg, 100 mg</td>
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<table>
<thead>
<tr>
<th><strong>Isotretinoin</strong> (13-cis-Retinoic acid)</th>
<th><strong>Cat. No.: HY-15127</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Isotretinoin(13-cis-Retinoic acid) is a medication used for the treatment of severe acne. It was first developed to be used as a chemotherapy medication for the treatment of brain cancer, pancreatic cancer and more.</td>
<td></td>
</tr>
<tr>
<td><strong>Purity:</strong> 99.88%</td>
<td></td>
</tr>
<tr>
<td><strong>Clinical Data:</strong> Launched</td>
<td></td>
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<tr>
<td><strong>Size:</strong> 100 mg, 500 mg</td>
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<thead>
<tr>
<th><strong>LG-100064</strong></th>
<th><strong>Cat. No.: HY-104070</strong></th>
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</thead>
<tbody>
<tr>
<td>LG-100064 is a retinoid-X-receptor (RXR) agonist, with ( EC_{50} ) of 330 nM, 200 nM, and 260 nM for RXR( \alpha ), RXR( \beta ) and RXR( \gamma ), LG-100064 can be used in the research of cancer.</td>
<td></td>
</tr>
<tr>
<td><strong>Purity:</strong> &gt;98%</td>
<td></td>
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<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 100 mg, 250 mg, 500 mg</td>
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<thead>
<tr>
<th><strong>LG100754</strong> (UVI 2112)</th>
<th><strong>Cat. No.: HY-108523</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>LG100754 (UVI 2112) is a RXR:RXR heterodimer antagonist, and functions as a RXR:PPAR( \alpha ) and RXR:PPAR( \gamma ) heterodimers agonist. LG100754 is an insulin sensitizer that functions through RXR.</td>
<td></td>
</tr>
<tr>
<td><strong>Purity:</strong> &gt;98%</td>
<td></td>
</tr>
<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 1 mg, 5 mg</td>
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<tr>
<th><strong>LY2955303</strong></th>
<th><strong>Cat. No.: HY-107765</strong></th>
</tr>
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<tbody>
<tr>
<td>LY2955303 is a potent and selective retinoic acid receptor gamma (RAR( \gamma )) antagonist with a ( K_i ) of 1.09 nM.</td>
<td></td>
</tr>
<tr>
<td><strong>Purity:</strong> 98.25%</td>
<td></td>
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<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 10 mM × 1 mL, 5 mg, 10 mg, 25 mg, 50 mg</td>
<td></td>
</tr>
</tbody>
</table>
Magnolol

Magnolol, a natural lignan isolated from the stem bark of Magnolia officinalis, is a dual agonist of both RXRα and PPARγ, with EC\textsubscript{50} values of 10.4 µM and 17.7 µM, respectively.

Cat. No.: HY-N0163
Purity: 99.72%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 10 mg, 50 mg, 100 mg

Palovarotene

Palovarotene is a nuclear retinoic acid receptor γ (RAR-γ) agonist.

Cat. No.: HY-14799
Purity: 99.77%
Clinical Data: Phase 3
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg

Peretinoin

Peretinoin is an oral acyclic retinoid retinoid with a vitamin A-like structure that targets retinoid nuclear receptors such as retinoid X receptor (RXR) and retinoic acid receptor (RAR).

Cat. No.: HY-100008
Purity: 99.02%
Clinical Data: Phase 3
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg

Retinoic acid

Retinoic acid is a metabolite of vitamin A that plays important roles in cell growth, differentiation, and organogenesis. Retinoic acid is a natural agonist of RAR nuclear receptors, with IC\textsubscript{50} of 14 nM for RARα/β/γ. Retinoic acid bind to PPARβ/δ with K\textsubscript{d} of 17 nM.

Cat. No.: HY-14649
Purity: 98.62%
Clinical Data: Launched
Size: 10 mM × 1 mL, 100 mg, 500 mg, 1 g, 5 g

Tamibarotene

Tamibarotene is a retinoic acid receptor α/β (RARα/β) agonist, showing high selectivity over RARγ.

Cat. No.: HY-14652
Purity: 99.77%
Clinical Data: Launched
Size: 10 mM × 1 mL, 10 mg, 50 mg

Tazarotene

Tazarotene (AGN 190168) is a selective retinoic acid receptor (RAR) agonist for the treatment of plaque psoriasis and acne vulgaris.

Cat. No.: HY-15388
Purity: 99.93%
Clinical Data: Launched
Size: 10 mg, 50 mg, 100 mg

Tazarotene

Tazarotene (AGN 190168) is a selective retinoic acid receptor (RAR) agonist for the treatment of plaque psoriasis and acne vulgaris.

Cat. No.: HY-15388
Purity: 99.93%
Clinical Data: Launched
Size: 10 mg, 50 mg, 100 mg

Trifarotene

Trifarotene (CD5789) is a retinoic acid receptor (RAR) agonist with K\textsubscript{d} values of 2, 15 and 500 nM for RARγ, RARβ and RARα, respectively.

Cat. No.: HY-100256
Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg
TTNPB
(Ro 13-7410; Arotinoid acid; AGN191183)

Cat. No.: HY-15682

TTNPB is a highly potent RAR agonist. Competitive binding assays using human RARs yield IC_{50}s of α=5.1 nM, β=4.5 nM, and γ=9.3 nM, respectively.

Purity: 99.19%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg

UVI 3003

Cat. No.: HY-107500

UVI 3003 is a highly selective antagonist of retinoid X receptor (RXR), and inhibits xenopus and human RXRa in Cos7 cells, with IC_{50}s of 0.22 and 0.24 μM, respectively.

Purity: >98.0%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 25 mg, 50 mg

WYC-209

Cat. No.: HY-124136

WYC-209, a synthetic retinoid, is a retinoic acid receptor (RAR) agonist. WYC-209 induces apoptosis primarily via the caspase 3 pathway (IC_{50}=0.19μM for inmalignant murine melanoma TRCs), and has long-term effects with little toxicity.

Purity: 99.64%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg