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Technology factsheet

Technology ID
SO-17659/UL-01917

Title	**Substituted phenyl cycloalkyl ureas and bioisosteres for the treatment of inflammatory diseases**
Activity sector	Psoriasis therapeutics
Inventor(s)	René C.-Gaudreault and Stéphane Gobeil, Axe Oncologie, Centre de recherche du CHU de Québec-Université Laval

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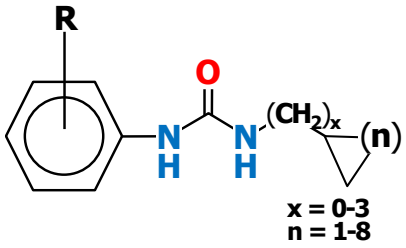
Markets	Inflammatory disease therapeutics: psoriasis (topical), arthritis (systemic)
Unmet need(s)	Highly potent and less toxic drugs to better control the proliferation and/or differentiation of keratinocytes, the skin cells responsible for psoriasis
Solutions	Substituted phenyl-3-(2-cycloalkyl) urea derivatives
Description	A medicinal chemistry research program has led to the synthesis and evaluation of a new class of compounds, **phenyl-3-(2-cycloalkyl) ureas** (PCUs), that can inhibit the production of pro-inflammatory cytokines (e.g. IL-1β, IL-6, TNFα) or chimiokines (e.g. IL-8), and could be used either for local or systemic applications.



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Fortin JS *et al.* (2007). Alkylation potency and protein specificity of aromatic urea derivatives and bioisosteres as potential irreversible antagonists of the colchicine-binding site. Bioorg Med Chem **15**: 4456-4469.

Fortin S *et al.* (2011). Characterization of the covalent binding of *N*-phenyl-*N*-(2-chloroethyl)ureas to {beta}-tubulin: importance of Glu198 in microtubule stability. J Pharmacol Exp Ther **336**: 460-467.

Fortin S *et al.* (2008). A comparative molecular field and comparative molecular similarity indices analyses (CoMFA and CoMSIA) of *N*-phenyl-*N*-(2-chloroethyl)ureas targeting the colchicine binding site as anticancer agents. Bioorg Med Chem **16**: 1914-1926.

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Strengths	Proprietary compounds Potential applications in other inflammatory diseases: arthritis, diabetes, intestinal inflammatory diseases, and cancer
Opportunity	SOVAR and Université Laval seek a partner for co-development, licensing, or commercialization of this technology
Intellectual property	C-Gaudreault R, S Gobeil, and J Rousseau. Novel urea compounds and bioisosteres thereof and their use as IL-6 expression inhibitors. *Patent pending*. Assignee: Université Laval

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