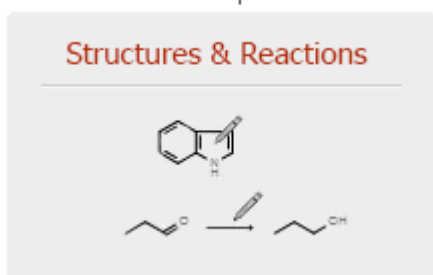


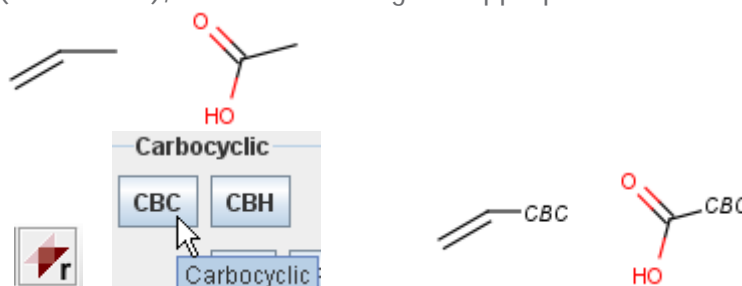
I would like to find patents containing information on the oxidative cleavage of c-c bonds (like those found in styrene) into carboxylic acids using manganese-containing catalysts. Then I want to export the list in a PDF



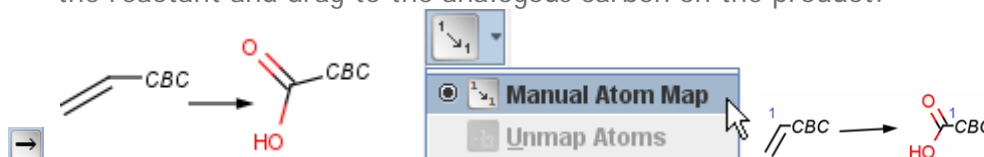
1. Click Structures and Reactions from the Reaxys Start page. Click the structure box to open the structure editor (MarvinSketch is used here).



2. Draw the propylene and acid fragments. Then add the appropriate Reaxys Generic Group (CBC) by clicking the "R" button, selecting the abbreviation (click Close), and then clicking the appropriate carbons in the reaction.



3. Draw the arrow. Then click the Atom mapping button, click a carbon on the reactant and drag to the analogous carbon on the product.



The final query looks like this:

The screenshot shows the Reaxys search interface. At the top, there are tabs for "Standard" and "Advanced". Below this is a "Search" section with three radio buttons: "Reactions" (selected), "Substances", and "Literature".

In the center, there is a search box containing a chemical reaction: C=CCBC >> OC(=O)CCBC. The carbon atom in the product is labeled with a "1". Below the search box are "EDIT" and "CLEAR" buttons, and a link that says "Create Structure Template from Name".

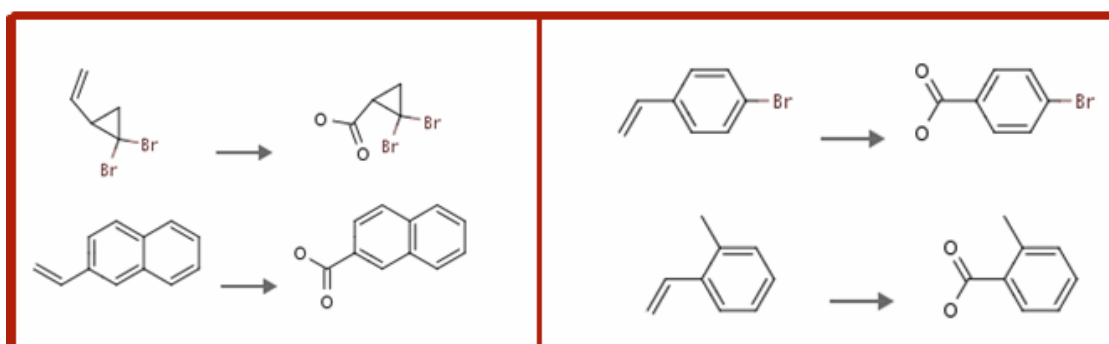
To the right of the search box are two columns of options:

- Search as / by:**
 - Product
 - Starting material
 - Reagent / Catalyst
 - Any role
 - As Drawn
 - Substructure
 - on heteroatoms
 - on all atoms
 - Similarity
- Options:**
 - Include tautomers
 - Ignore stereo
 - No salts
 - No mixtures
 - No isotopes
 - No charges
 - No radicals
 - No additional rings
 - Ignore Atom Mappings
 - Align results with query

At the bottom right of the options section is a link for "More options".

Results:

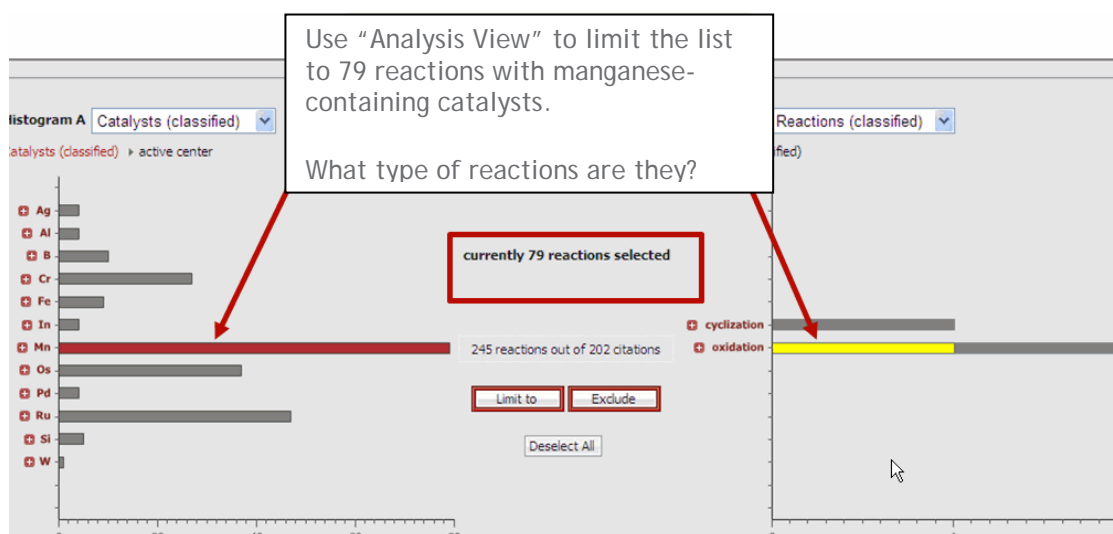
245 reactions, like these, are retrieved:



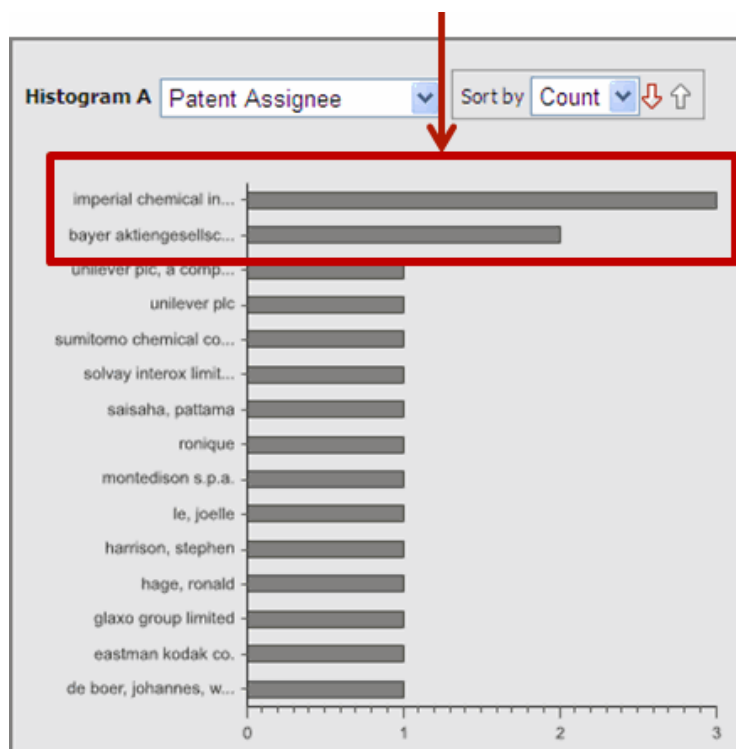
Which ones use manganese-containing catalysts? Click the Analysis View button.



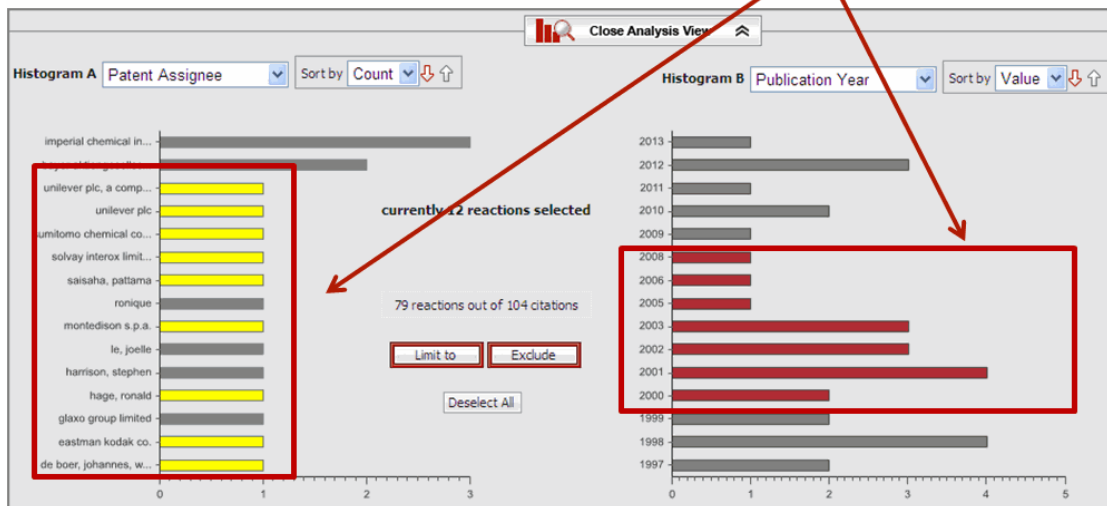
Then select the appropriate criteria from the drop-down menus as shown below.



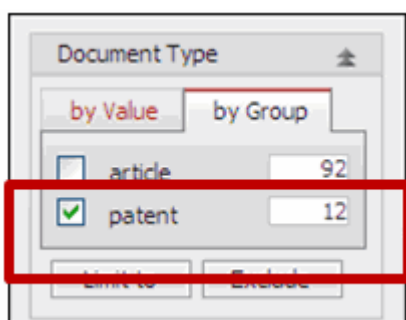
Which Patent Assignees show up most frequently in this list of 79 reactions?



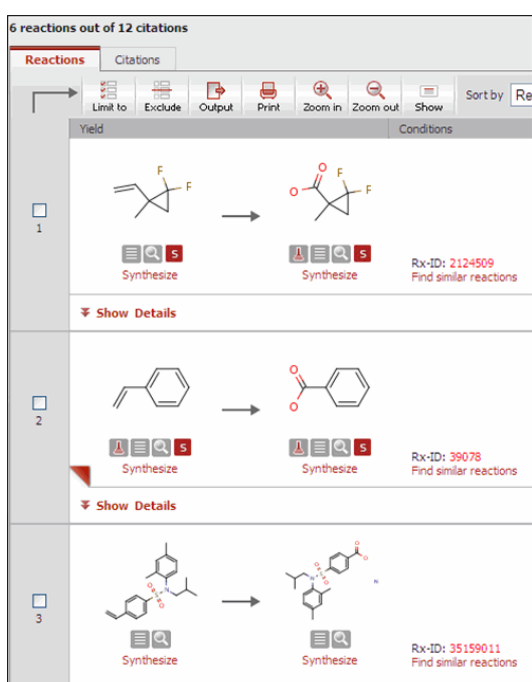
Who received patents with this type of reaction between 2000 - 2008?



Limit the list to reactions found in patents:



View the list of 6 reactions or 12 citations.



4 reactions out of 12 citations

Reactions Citations

Reactions	Citations	Authors	Year	Source
		GLAXO GROUP LIMITED; BRALLO, Vincenzo; CORPUS, Ananda; JENNIFER; MARSDEN, Stephen J.E. Dale	2013	Patent: WO2013/08141 A1, BR3.1 Patent Family: WO2013/08141 A1 Pub. Text
		METHOD FOR THE OXIDATION OF UNSATURATED ORGANIC COMPOUNDS	2013	Patent: WO2013/08141 A1, BR3.1 Patent Family: WO2013/08141 A1, EP209947 A1 Pub. Text
		A one pot method for the oxidation of unsaturated organic compounds	2013	Patent: EP240962 A1, BR3.1 Patent Family: EP240962 A1, WO2012/08141 A1, EP209947 A1 Pub. Text
		Process for producing substituted furans	2013	Patent: EP138173 A1, BR3.1 Patent Family: EP138173 A1, WO2012/08141 A1, EP209947 A1 Pub. Text

Click Output.



And then export the list in various formats, such as PDF.

REAXYS®

SULFONAMIDE COMPOUNDS AND THEIR USE IN THE MODULATION RETINOID-RELATED ORPHAN RECEPTOR
Patent: WO201346431; C01B; A1
Abstract: The present invention is directed to novel retinoid-related orphan receptor gamma (RORγ) modulators of formula (I), processes for their preparation, pharmaceutical compositions containing these modulators, and their use in the treatment of inflammatory, metabolic and autoimmune diseases mediated by RORγ wherein R₁ to R₄ are as defined in claim 1.
[View in Reaxys](#), 13

Patent Assignees / Inventors

Assignees	Inventors (Authors)
GLAXO GROUP LIMITED; BIRALUT, Veronique; CAMPBELL, Amanda; JENNIFER; HARRISON, Stephen; LE, Joseph	BIRALUT, Veronique; CAMPBELL, Amanda; JENNIFER; HARRISON, Stephen; LE, Joseph

Publication / Application Data

Patent No.	Kind Code	Publ. Date	Application No.	Filing Date	Indexed Patent
WO201346431	A1	2013/04/04	WO2012-069846	2012/09/28	yes

Patent Classification

Main IPC	A61K 31/18
Secondary IPC	A61K 31/33; C07C 311/21; C07C 311/26; C07C 213/30; C07D 213/30; C07D 213/41; C07D 213/66; C07D 213/68; C07D 213/75; C07D 233/02; C07D 239/26; C07D 349/08; C07D 367/04; C07D 381/08

Reaction 1 of 1 citation 1 of 3

Field **Conditions & References** **Rx-ID: 3519011** [View in Reaxys](#)

3 mg **Example Name P180 (Page/Page column 82)**

Example Title Preparation of Product P180: 4-(N-(2,4-dimethylphenyl)-N-isobutylsulfamoyl)benzoic acid, ammonia salt

N-(2,4-dimethylphenyl)-N-isobutyl-4-vinylbenzenesulfonamide (0.06 g, 0.175 mmol) was dissolved in acetone (0.240 mL) and cooled to -2 °C, with stirring. A solution of potassium permanganate (0.018 g, 0.117 mmol) and magnesium sulfate (7.00 mg, 0.058 mmol) in water (0.4 mL) was prepared and added dropwise to the acetone solution, over 20 minutes. The mixture was stirred for an additional 10 minutes, then the temperature increased to room temperature and the mixture filtered and concentrated under a stream of nitrogen. LC/MS analysis confirmed presence of some acid product as well as hydrolyzed product, but showed mainly unreacted starting material. So above procedure was repeated again using this crude material, with the post-addition stirring increased to 2.75 hours at 0 °C then 15 minutes warming to rt. Analysis confirmed improved conversion. [View in Reaxys](#). So the procedure was

Stage 1: With potassium permanganate, magnesium sulfate in water, acetone, T=2-20C, inert atmosphere
Stage 2: With ammonia in methanol

REAXYS®

METHOD FOR THE OXIDATION OF UNSATURATED ORGANIC COMPOUNDS
Patent: WO201012042; C02C; A1
Abstract: The present invention concerns a method for the oxidative cleavage of unsaturated carbon-carbon bonds into carboxylic acids or ketones using a manganese catalyst and hydrogen peroxide.
[View in Reaxys](#), 23

Patent Assignees / Inventors

Assignees	Inventors (Authors)
ELSEVIER PLC; HAGE, Ronald; DE BOER, Johannes; WITTE, SAISHA, Patricia	BOER, Johannes; WITTE, SAISHA, Patricia

Publication / Application Data

Patent No.	Kind Code	Publ. Date	Application No.	Filing Date	Indexed Patent
EP2409962	A1	2010/11/26	EP2010-170239	2010/07/21	
WO201012042	A1	2010/11/26	WO2011-081093	2011/07/21	yes
EP2395847	A1	2010/05/29	EP2011-736028	2011/07/21	

Priority Data

Priority No.	Priority Date
EP2010-170239	2010/07/21

Patent Classification

Main IPC	C07C 61/286
Secondary IPC	C07C 63/126; C07C 66/02; C07C 66/14; C07C 63/06

of 1 citation 2 of 3

Field **Conditions & References** **Rx-ID: 33078** [View in Reaxys](#)

Example Name 4 (Page/Page column 18-19)

Experiment 4: styrene → benzoic acid To a mixture of (MnO₂)₂(Me₃TACN)₂ (PF₆)₂·H₂O (8.1 mg, 10 μmol) and 2, 6-dichlorobenzoic acid (87.3 mg, 0.30 mmol) in CH₂Cl₂ (7 ml) was added H₂O₂ (30 μl of a 50 percent aq. solution, 0.93 mmol) at room temperature and the resulting mixture was stirred for 20 min. Subsequently, styrene (1.04 g, 10 mmol) was added together with CH₂Cl₂ (2 ml), H₂O₂ (3.22 ml of a 50 percent aq. solution, 9.8 mmol) was then added at room temperature using a syringe pump (0.14 ml/h). A second amount of (MnO₂)₂(Me₃TACN)₂ (PF₆)₂·H₂O (8.1 mg, 10 μmol) was added to the reaction mixture 8 hours after the addition of hydrogen peroxide had commenced. When the addition of hydrogen peroxide was completed, the mixture was stirred for an additional hour. Water (10 ml) and diethyl ether (10 ml) were added and the pH of the aqueous layer was set to pH = 10 by adding some 4 M NaOH (aq.). The

With dihydrogen peroxide, 2-6-di-chlorobenzoic acid, Mn2O3(Me3-TACN)2(PF6)2 H2O in water, acetonitrile, Time=32h. T= 20C

Do you have an idea for a workflow example?

Please contact me:

Christine Flemming
c.flemming@elsevier.com