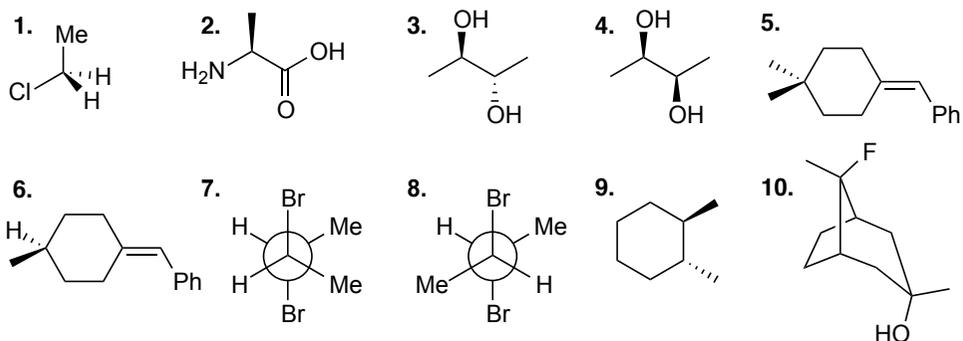


## STÉRÉOCHIMIE

## Tester les bases

## Exercice 1 : chirale ou achirale ?

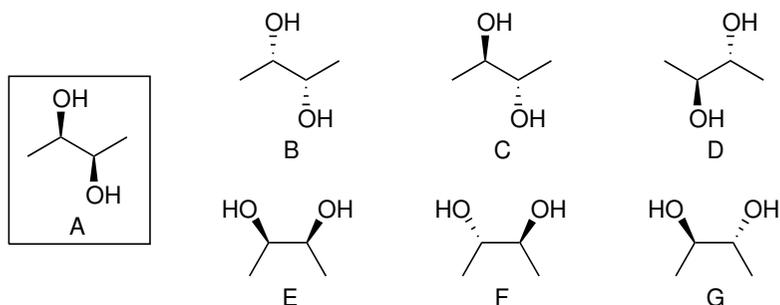
Les molécules suivantes sont-elles chirales ?



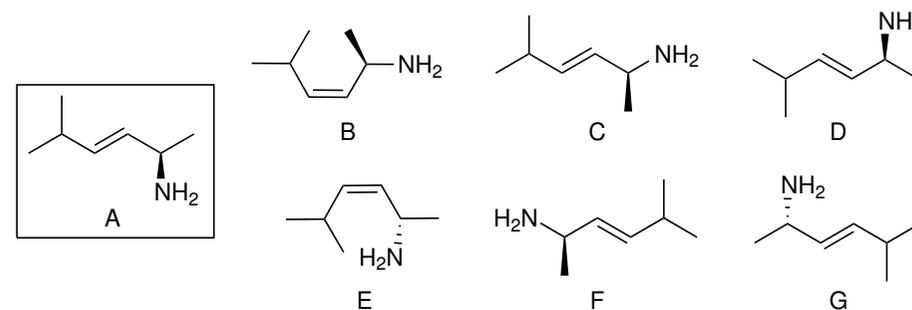
## Exercice 2 : relation de stéréoisomérisation

En comparant chaque molécule à la molécule A, indiquer s'il s'agit d'un couple d'énantiomères, d'un couple de diastéréoisomères ou de deux molécules identiques.

1.

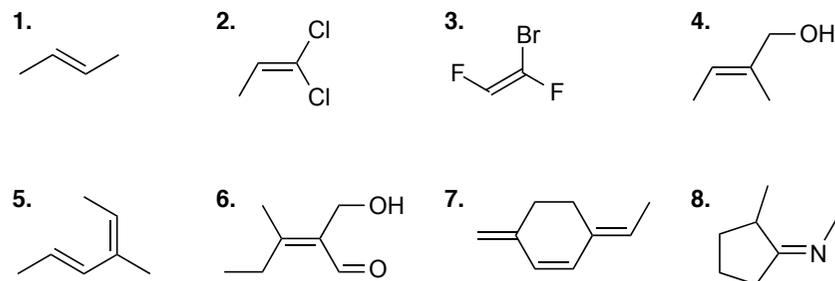


2.

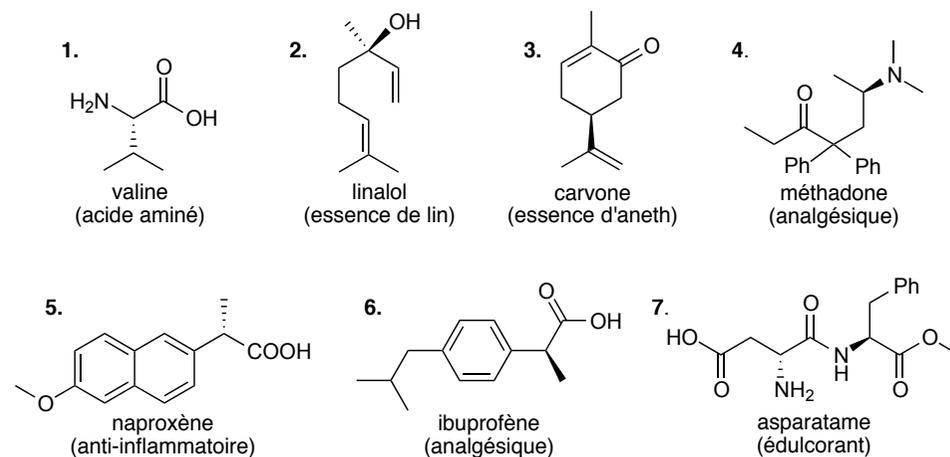


## Exercice 3 : stéréodescripteurs

1. Déterminer les descripteurs stéréochimiques des doubles-liaisons stéréogènes éventuelles des molécules suivantes.

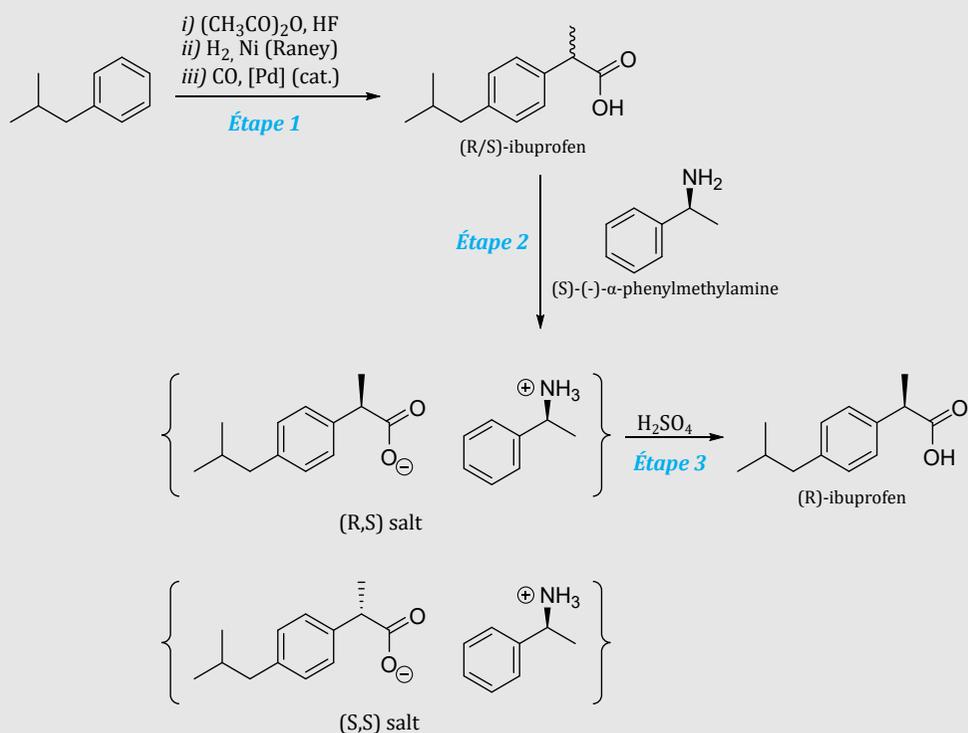


2. Pour les molécules suivantes, identifier les atomes de carbone asymétriques et déterminer leur descripteur stéréochimique.





## Document n° 2 : synthèse de l'acide 2-[4-(2-méthylpropyl)phényl]propanoïque



## Document n° 3 : Protocoles expérimentaux des étapes 2 et 3

**Étape 2** - Equip a 100 mL round-bottom flask with an inlet (or adaptor) for a thermometer and place the flask on a sand bath. Carefully insert a 110 °C thermometer through the side arm and position it so that it is about 1-4 inch from the bottom of the flask. Add a medium sized stir bar to the flask. Add 3.0 grams of racemic ibuprofen and 30 mL of 0.24 mol·L<sup>-1</sup> KOH to the flask. Initiate stirring. Heat the solution to an internal temperature between 75 °C - 85 °C. Most but not all of the ibuprofen will dissolve at this temperature. Next add 0.9 mL of (S)-(-)- $\alpha$ -phenethylamine slowly (dropwise) to the reaction mixture. (Notes : (1) (S)-(-)- $\alpha$ -phenethylamine is irritating to the skin. Wear gloves when using this compound. (2) (S)-(-)- $\alpha$ -phenethylamine reacts with the CO<sub>2</sub> in the air. Recap bottle

*immediately after using.*) Precipitation will form within a few minutes. Keep the solution at this temperature for 1 hour. Remove the flask from the sand bath and allow it to cool to room temperature. Collect the precipitated salt by vacuum filtration. Wash the solid with a small amount (2-3 mL) of ice cold water. Weigh the solid and set aside a small amount of it for a melting point determination. Save the filtrated liquid.

**Étape 3** - Add 25 mL of 2 mol·L<sup>-1</sup> H<sub>2</sub>SO<sub>4</sub> to the filtrate from previous part. Stir the solution for 5 minutes. The solution should become cloudy and insoluble oily droplets should form. Extract the aqueous layer with 15 mL of methyl tert-butyl ether (MTBE) three times. Combine the organic layers together and extract them once with 15 mL of water and then once with 15 mL of a saturated NaCl solution. Dry the organic layer over anhydrous sodium sulfate.