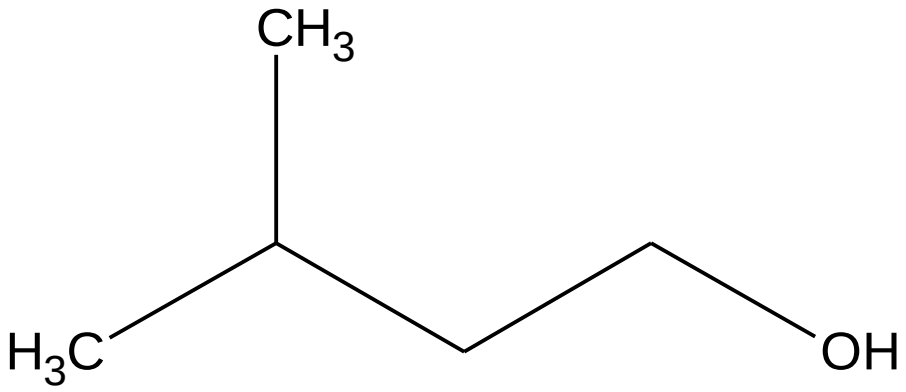
LC09 : Synthèse chimique, aspect macroscopique et mécanisme réactionnel

Niveau : lycée

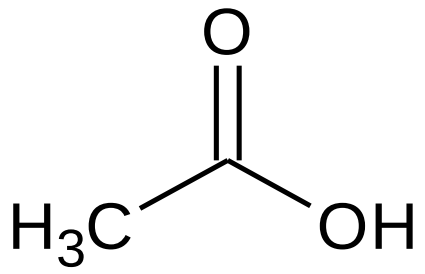
Prérequis : Formules topologiques, schmas de Lewis, spectroscopie IR, groupes caractéristiques

Réactifs de départ



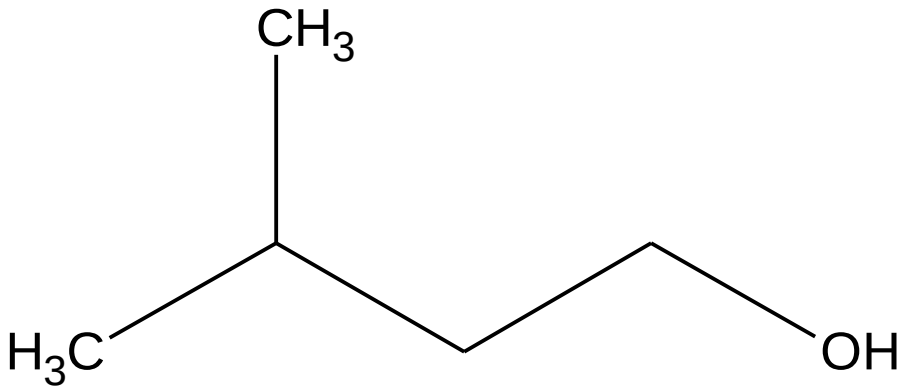
3-méthylbutan-1-ol

+



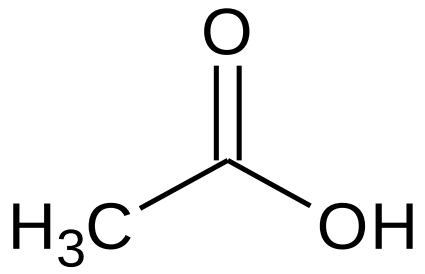
Acide éthanoïque

Produits



3-méthylbutan-1-ol

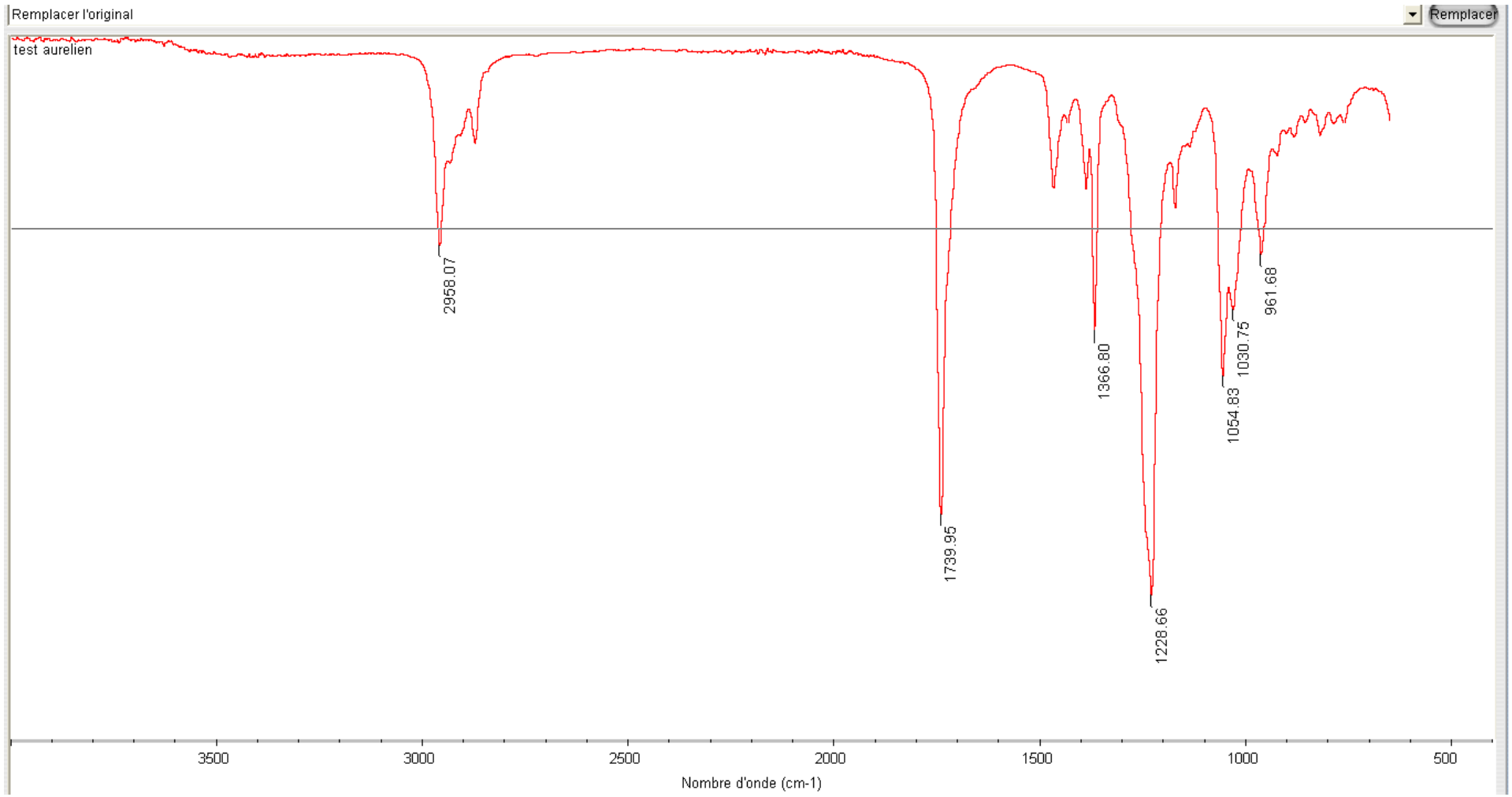
\+



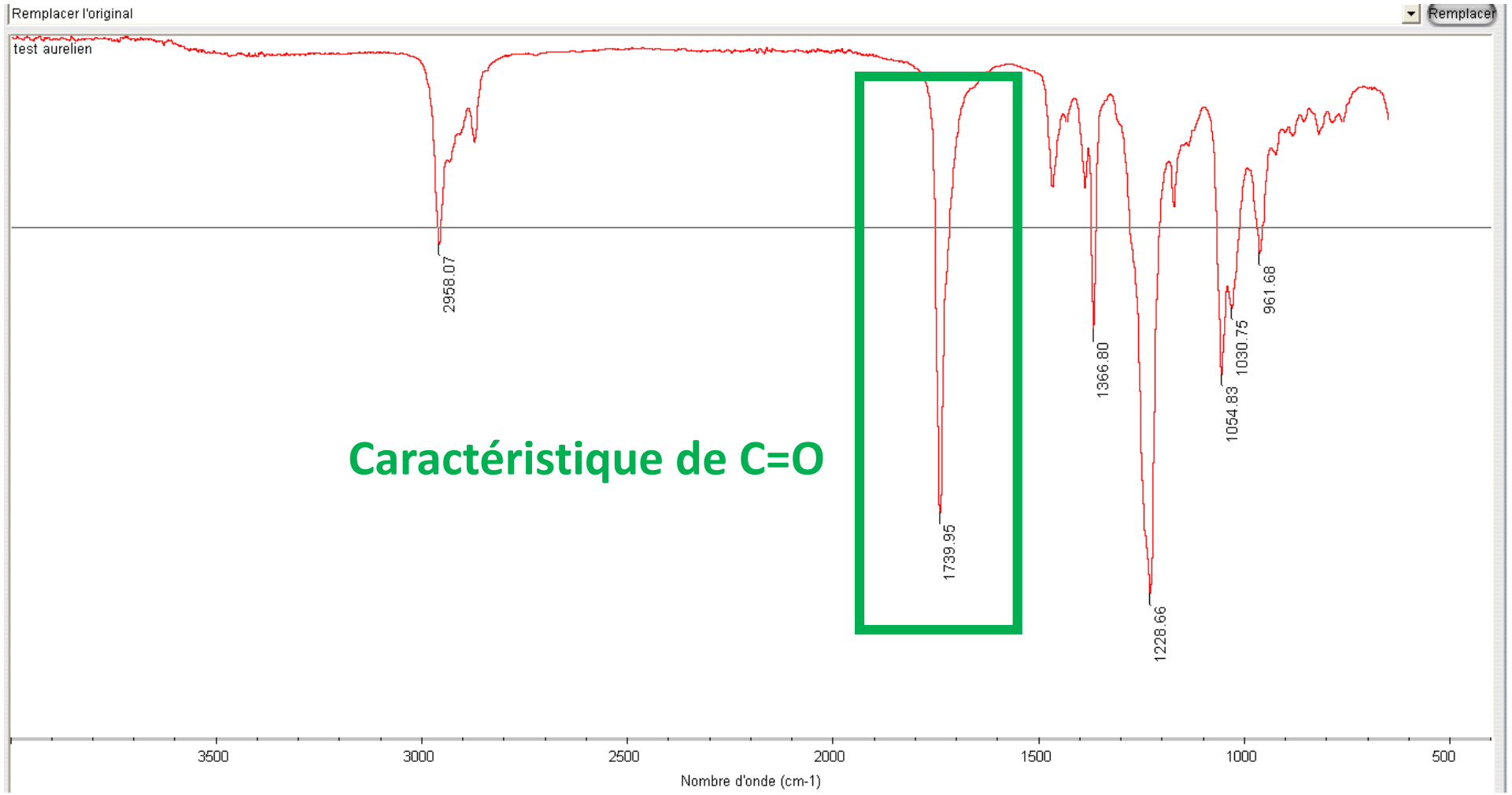
Acide éthanoïque

?

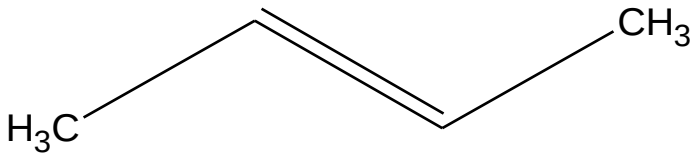
Constatations : spectre IR



Constatations : spectre IR



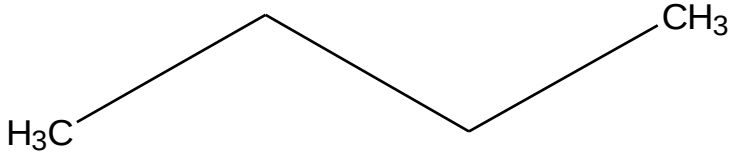
Addition



E-But-2-ène

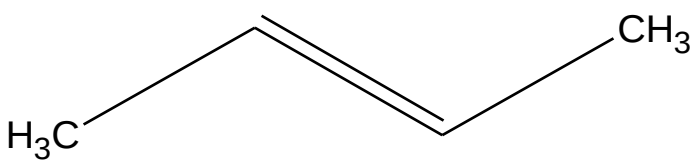
\+ H_2 ⟶

Dihydrogène



Butane

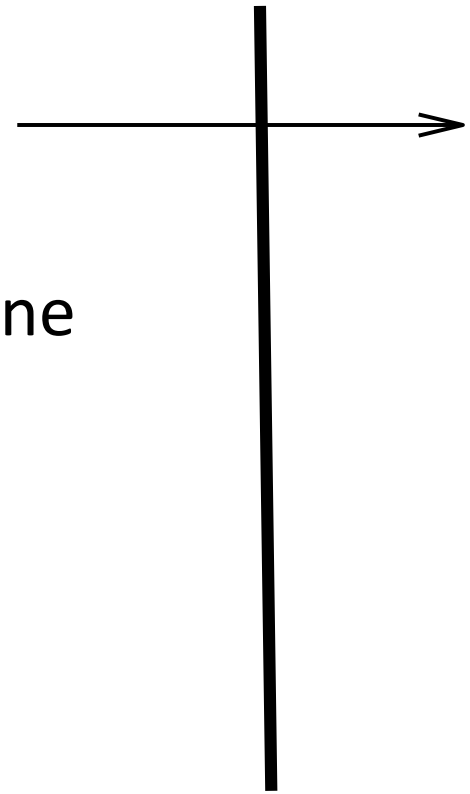
Addition : comment la reconnaître

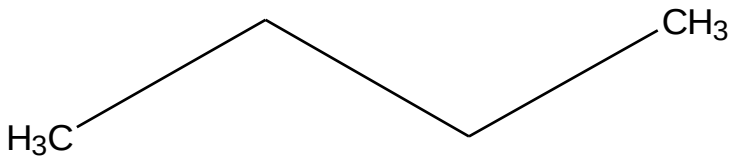


E-But-2-ène

+ H_2

Dihydrogène



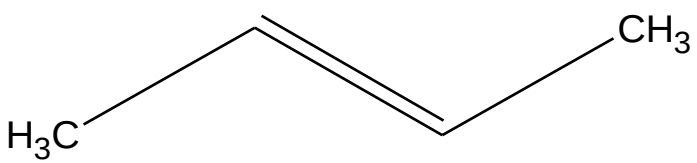


Butane

2 réactifs

1 produit

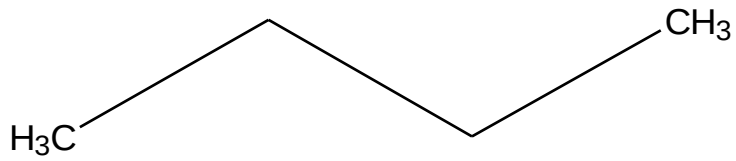
Addition : comment la reconnaître



E-But-2-ène

\+ H_2

Dihydrogène



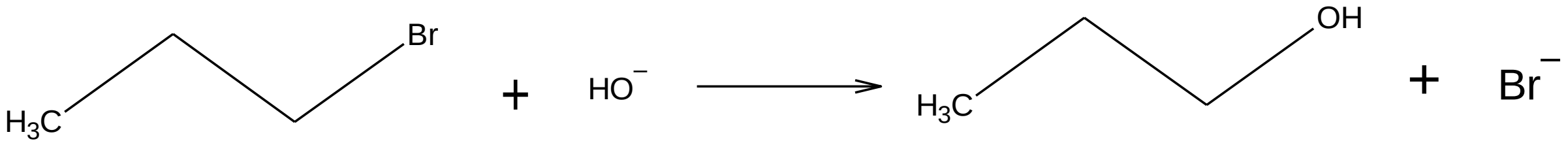
Butane

2 réactifs

1 produit

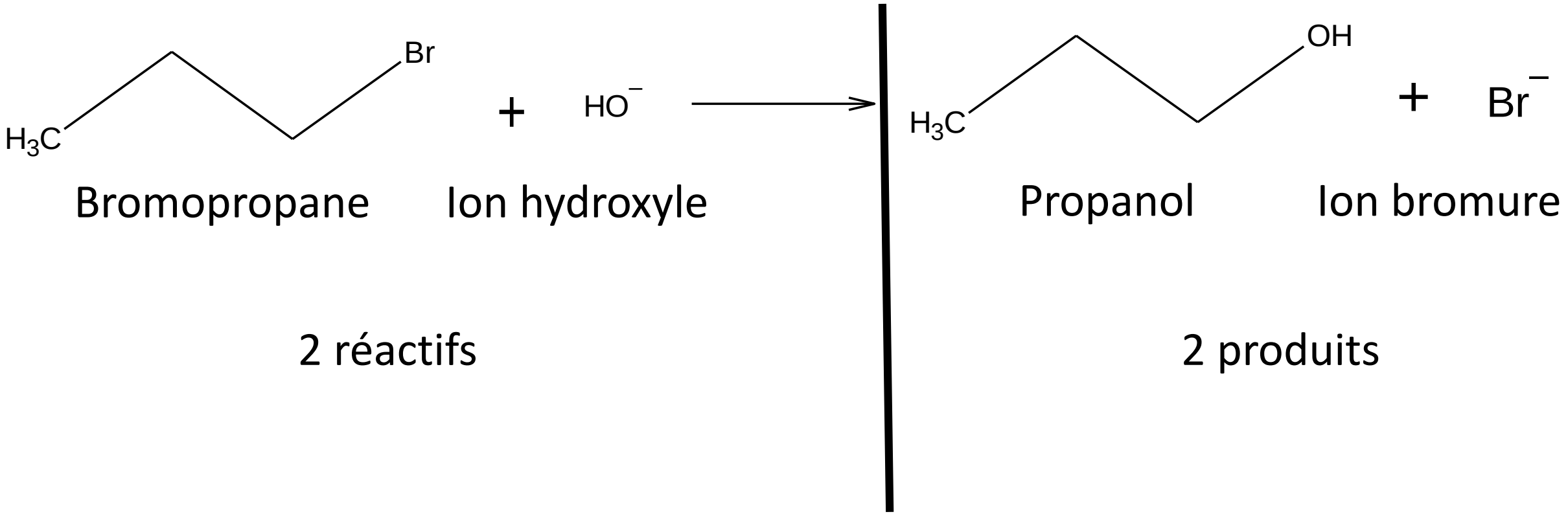
Plus de réactifs que de produits : addition !

Substitution



Bromopropane Ion hydroxyle Propanol Ion bromure

Substitution : la reconnaître

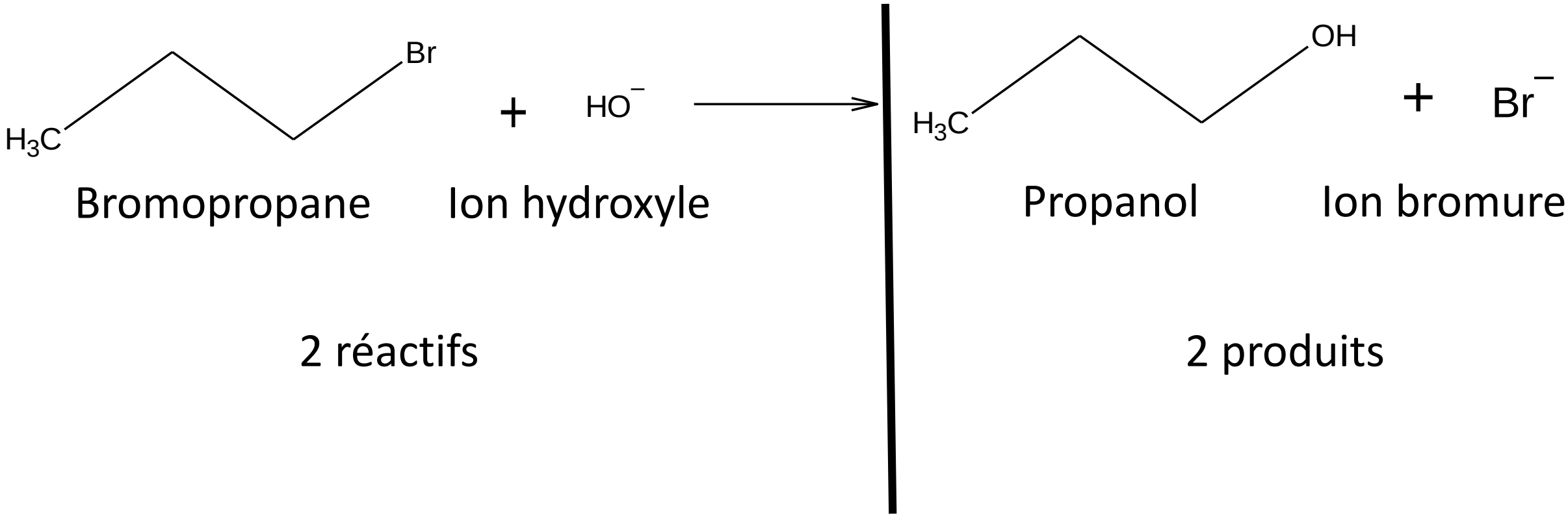


Bromopropane Ion hydroxyle Propanol Ion bromure

2 réactifs

2 produits

Substitution : la reconnaître



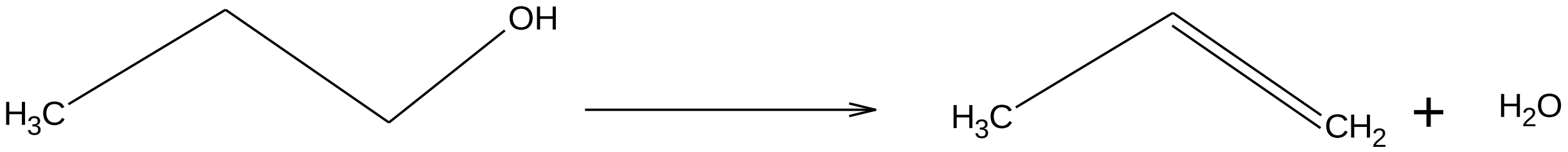
Bromopropane Ion hydroxyle Propanol Ion bromure

2 réactifs

2 produits

Autant de réactifs que de produits : substitution!

Elimination

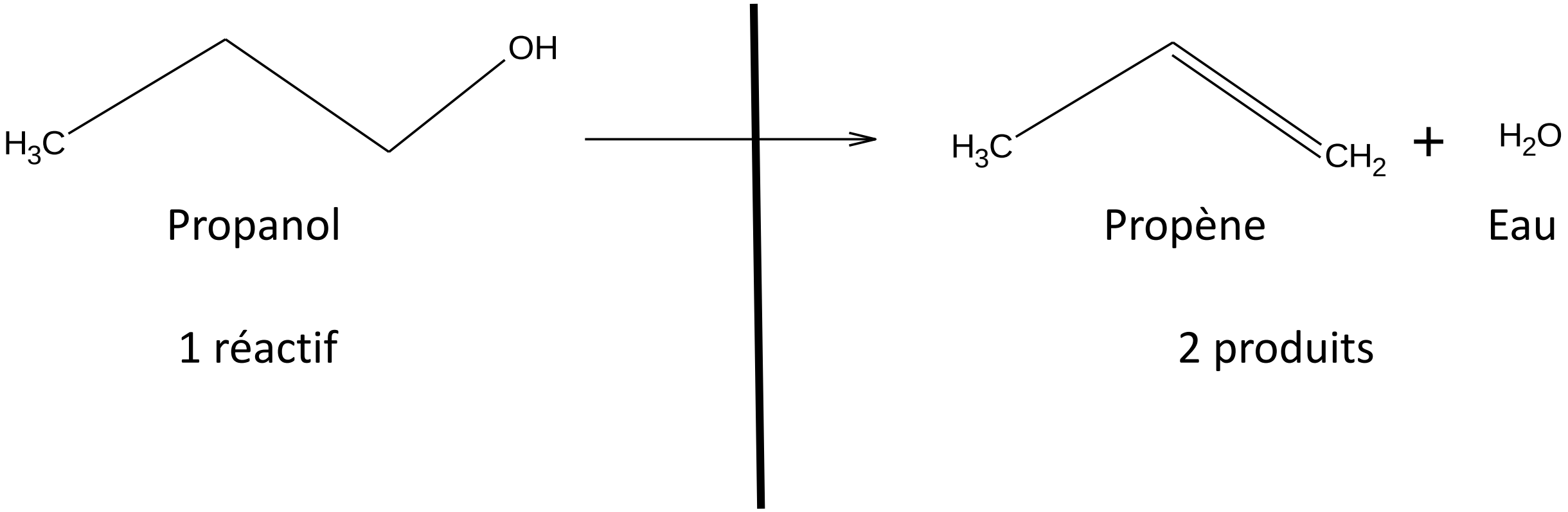


Propanol

Propène

Eau

Elimination : la reconnaître



Propanol

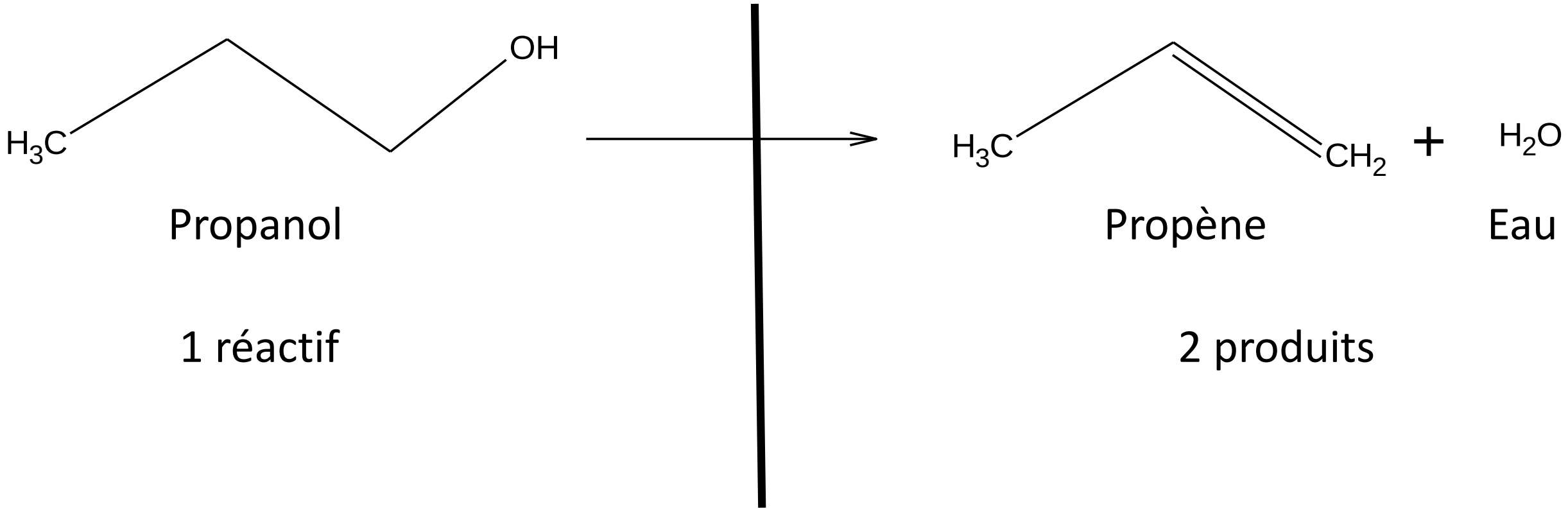
Propène

Eau

1 réactif

2 produits

Elimination : la reconnaître



Propanol

Propène

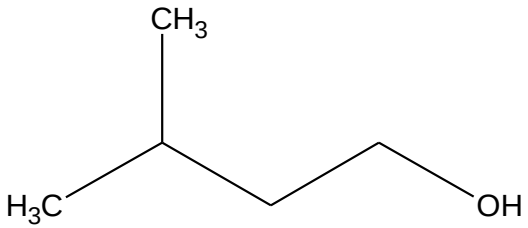
Eau

1 réactif

2 produits

Moins de réactifs que de produits : élimination!

Réaction étudiée



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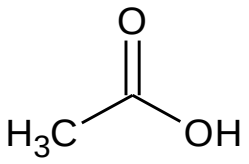
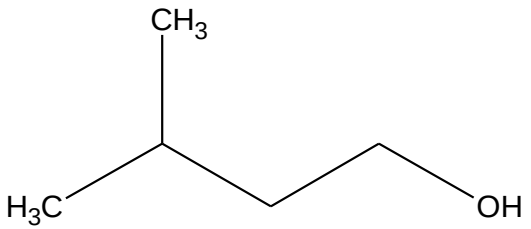


3-méthylbutan-1-ol

Acide éthanoïque

Réaction étudiée



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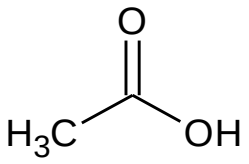
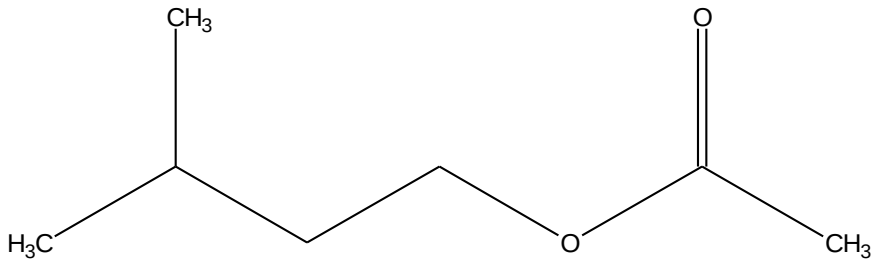




+ H_2O

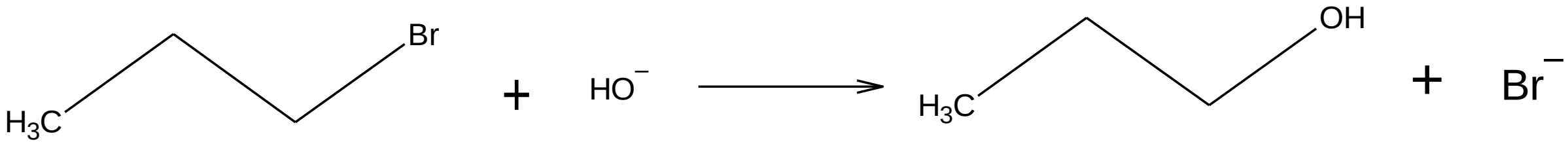
3-méthylbutan-1-ol

Acide éthanoïque

Ethanoate de 3-méthylbutyle

Eau

Exemple de mécanisme: charges



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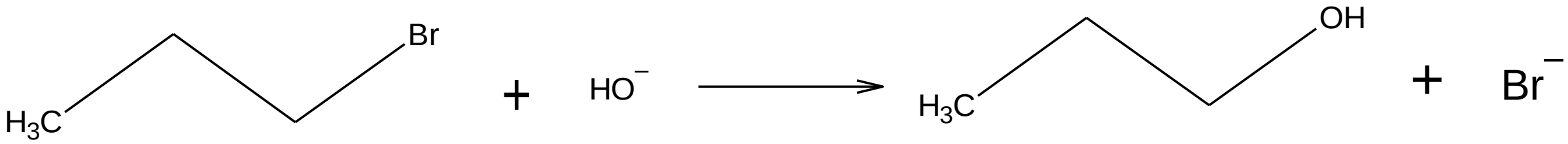
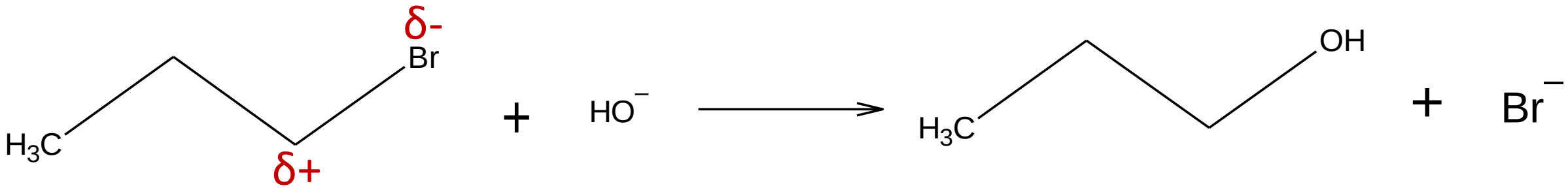


$\chi(Cl)>\chi(C)$

Exemple de mécanisme: charges



χ(Cl)>χ(C)

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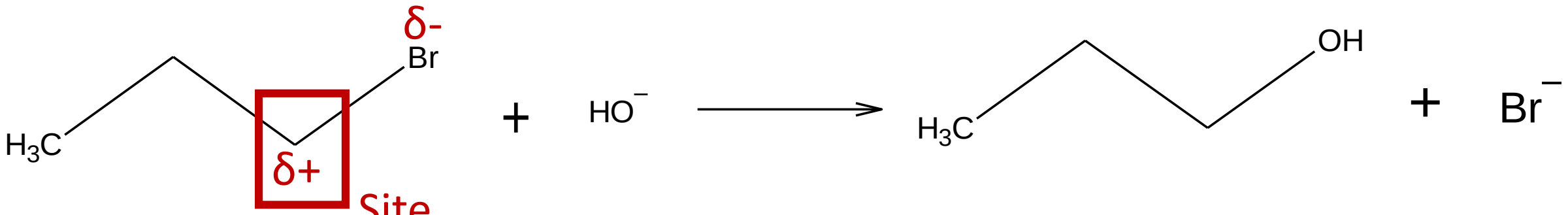
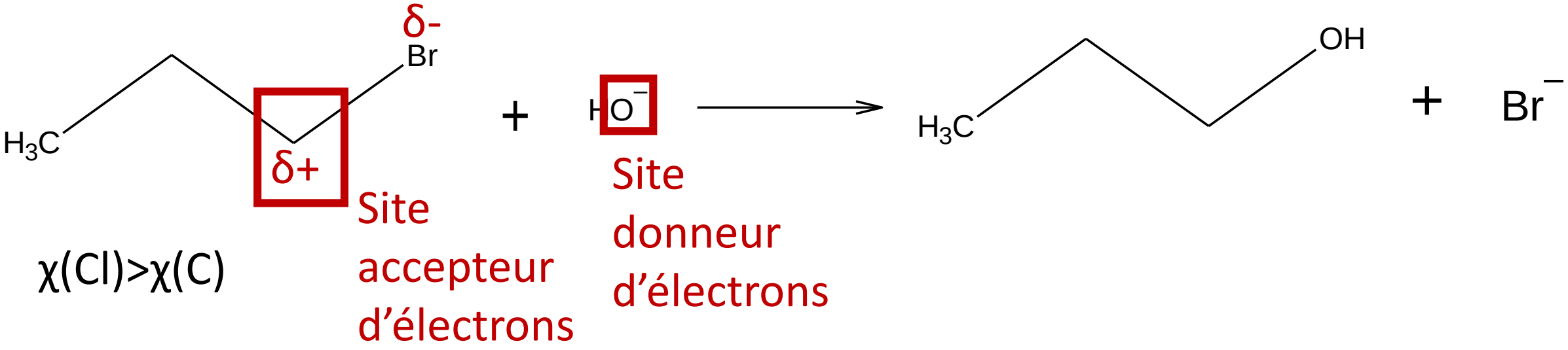


χ(Cl)>χ(C)

Site accepteur d'électrons

Exemple de mécanisme: charges



χ(Cl)>χ(C)

Site accepteur d'électrons

Site donneur d'électrons