



Maybridge Chiral Resolution Screening and Purification Kits

Offering rapid access to optically pure
chiral compounds



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Introduction

Diastereomeric crystallization is a commonly used effective process to obtain optically pure chiral compounds from their racemic mixtures. However, choosing the optimal conditions for the process (e.g., combination of resolving agents and solvents) is time-consuming, tedious and labor-intensive.

Maybridge Chiral Resolution Screening and Purification Kits provide scientists with a quick and systematic approach to find the best separation conditions under which the target compound can be isolated with the highest yield and optical purity.

Key features and benefits

- **Rapid Screening** – the kits include 384 different combinations of resolving agents and solvents, increasing the chances of finding the optimal separation conditions
- **High Performance** – development time reduced to one day
- **Efficient** – as little as 0.4mmol of racemate required
- **Ready to Use** – resolving agents and solvents are pre-dispensed in 96-well plates
- **Convenient** – the screening kits provide positive results identifiable by a quick visual or optical inspection, and the purification and recovery kit allows easy recovery and purification of the enantiomers

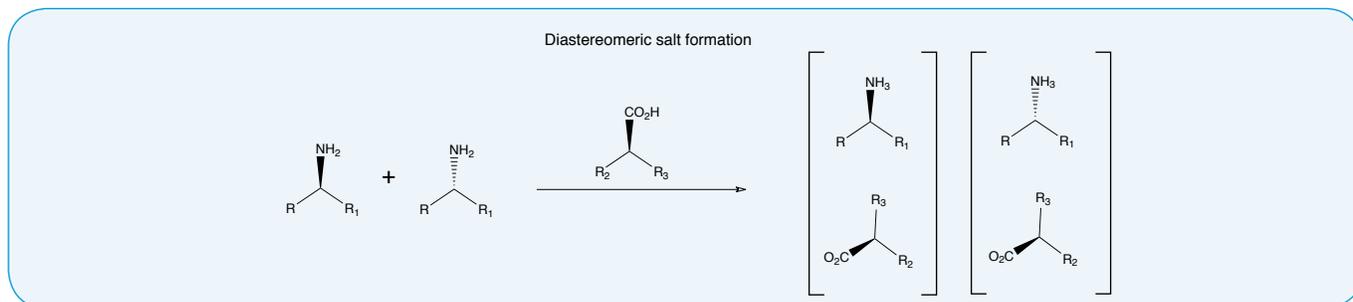


Types of Chiral Resolution Screening and Purification Kits

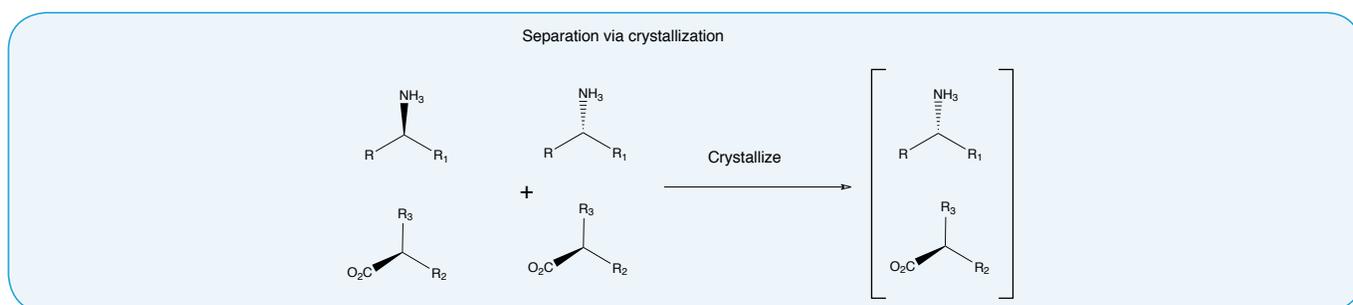
| Product Name | Description | Selection Guide | Amount Racemate Required | Plate Type | Product Code |
|--|--|--|--------------------------|------------|---------------|
| Maybridge Chiral Resolution Screening Kit for base racemates | <ul style="list-style-type: none"> • 4 x 96 plates containing 32 different acidic resolving agents • 4 x 96 plates containing 12 different solvents | Identifies optimal conditions for resolving base chiral compounds (e.g., amines) | 12.0mmol | Plastic | CSA05004P |
| | | | 0.4mmol | Glass | CSA05004G |
| Maybridge Chiral Resolution Screening Kit for weak base racemates | <ul style="list-style-type: none"> • 2 x 96 plates containing 32 different strong acidic resolving agents • 2 x 96 plates containing 12 different solvents | Identifies optimal conditions for resolving weak base chiral compounds (e.g., amines) | 12.0mmol | Plastic | CSA05004STRG |
| | | | 0.4mmol | Glass | CSA05004GSTRG |
| Maybridge Chiral Resolution Screening Kit for acid racemates | <ul style="list-style-type: none"> • 4 x 96 plates containing 32 different basic resolving agents • 4 x 96 plates containing 12 different solvents | Identifies optimal conditions for resolving acid chiral compounds (e.g., carboxylic acids) | 12.0mmol | Plastic | CSB05004P |
| | | | 0.4mmol | Glass | CSB05004G |
| Maybridge Chiral Purification and Recovery Kit for base racemates | <ul style="list-style-type: none"> • 1 x 200mL recovery solution for recovery of the resolved racemates • 2 x 250mL bottles for filtration and purification • 1 filter funnel • 1 pack of pH paper | Used in conjunction with the screening kits, this kit provides the components necessary to recover and purify the chiral isomers from base racemates | | | CSA08004B |
| Maybridge Chiral Purification and Recovery Kit for acid racemates | <ul style="list-style-type: none"> • 1 x 200mL recovery solution for recovery of the resolved racemates • 2 x 250mL bottles for filtration and purification • 1 filter funnel • 1 pack of pH paper | Used in conjunction with the screening kits, this kit provides the components necessary to recover and purify the chiral isomers from acid racemates | | | CSA08004A |

How the kits work

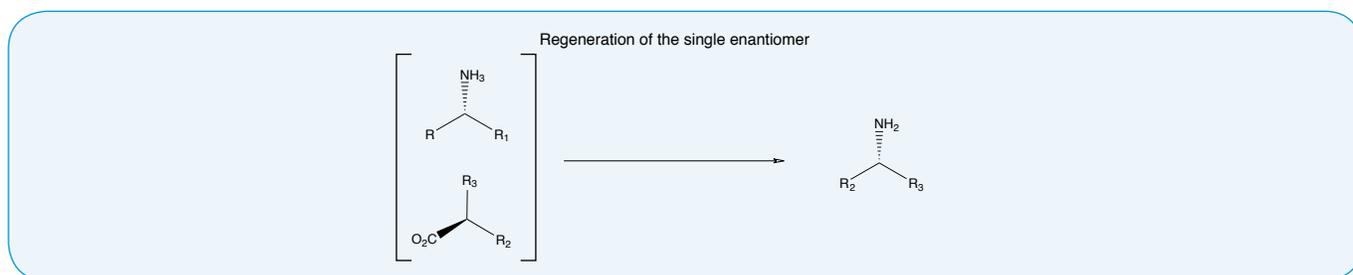
Resolution of racemic chiral acids and amines can be achieved via the crystallization of their corresponding diastereomeric salt. The racemic compound, in this example a primary amine, is treated with an enantiomerically pure organic acid (in this case a carboxylic acid, but sulfonic acids can be used as well).



Under the right conditions, one of the diastereomeric formed salts will precipitate as crystals whereas the other remains in solution. It is then possible to separate the salts by filtering the precipitate and recrystallizing from a suitable solvent. Further recrystallizations are often required to achieve the desired purity of the product.



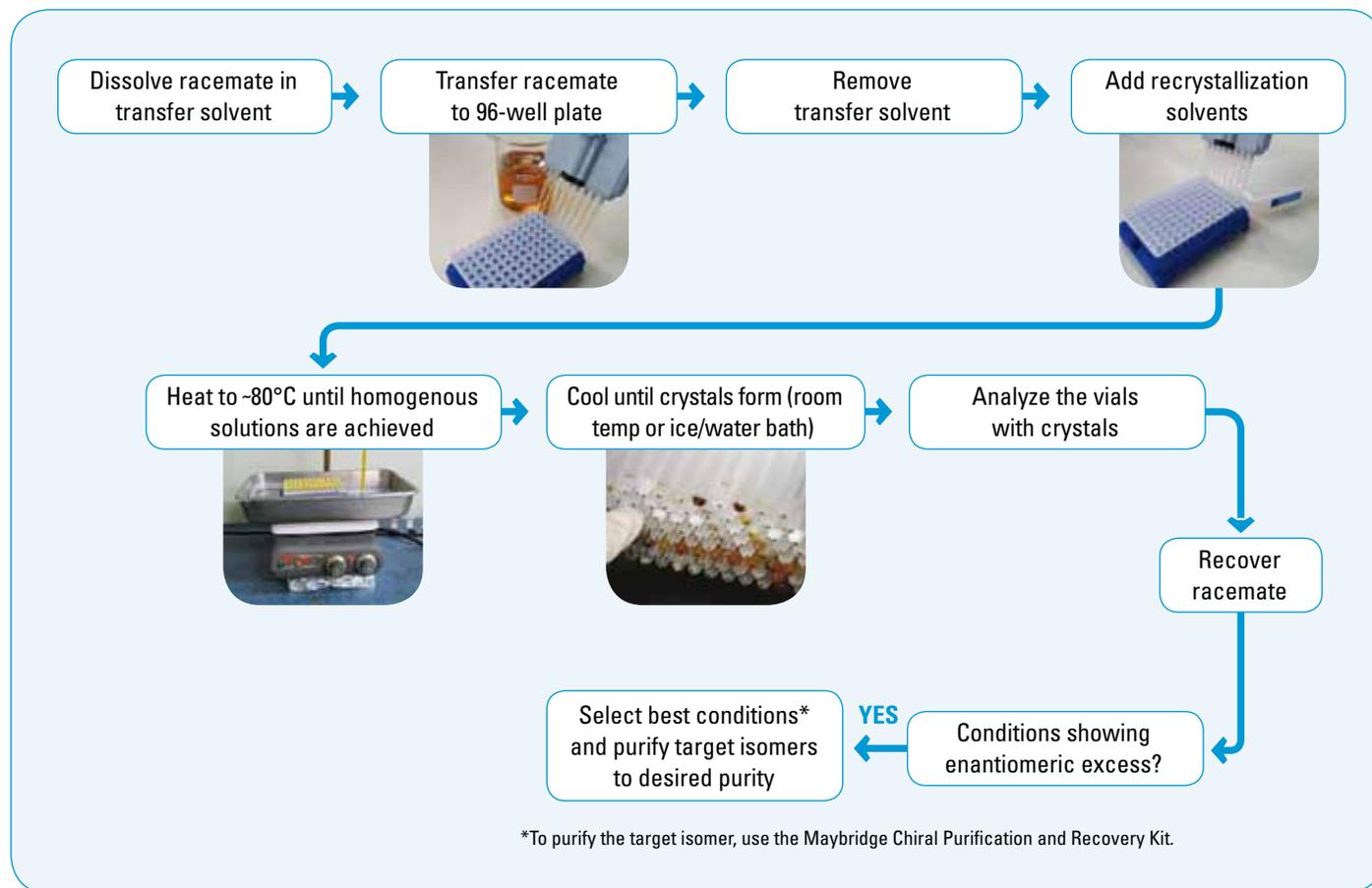
The amine can then be isolated using an alkaline aqueous work-up to give the free base.



How to use the kits

- Dissolve the racemic starting material (12.0mmol required for the plastic vials and 0.4mmol for the glass vials) in a transfer solvent and distribute among the individual vials containing the resolving agents.
- Remove the transfer solvent via evaporation.
- Transfer the crystallization solvents to vials containing the racemic starting material and resolving agents.
- Heat the entire plate to ~80°C for up to 5 minutes until a homogenous solution is achieved. (The plate is chemically inert and able to withstand extreme temperatures.)
- Cool the solutions until crystals begin to appear (either room temperature or in an ice/water bath).
- Analyze the crystals to identify which combination of resolving agent and solvent is optimal.
- At any point, recover the racemic material and extract and purify individual isomers using the components provided in the Purification and Recovery Kit.

Illustrated workflow



For more information, please visit our website at www.maybridge.com or contact your local distributor.

Fisher Scientific — U.S.
Tel: 800-766-7000
Fax: 800-926-1166
www.fishersci.com

Fisher HealthCare
Tel: 800-640-0640
Fax: 800-290-0290
www.fisherhealthcare.com

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Fax: 770-871-4726
www.fishersci.com

Fisher Scientific Canada
Tel: 800-234-7437
Fax: 800-463-2996
www.fishersci.ca

