Cell Selection & Expansion

STREP-TAG® TECHNOLOGY FOR CELL ISOLATION

Fab-TACS®/Nano-TACS® and MHC I Streptamer®

STREP-TAG® TECHNOLOGY FOR CELL ISOLATION

The Strep-tag® technology provides methods for isolating cells via their surface markers (Traceless Affinity Cell Selection - Fab-TACS®/Nano-TACS®) or via their antigen specificity (MHC I Streptamer®). Both approaches use reversible reagents that yield completely label-free cells.

MHC I-Strep

CD8 Fab-Strep

CD19 Nano-Strep

ANTIGEN-SPECIFIC CELL ISOLATION (MHC I STREPTAMER®)

In the MHC I Streptamer® approach, peptide loaded MHC I molecules (MHC I-Streps) targeting antigen-specific T cells are used. Due to their low affinity as monomers, multimerization on Strep-Tactin® backbones is required to ensure stable binding to cells.

SURFACE MARKER SPECIFIC CELL ISOLATION (FAB-TACS®/NANO-TACS®)

In the Fab-TACS®/Nano-TACS® approach, low affinity Fab fragments or nanobodies (Fab-Streps or Nano-Streps) against specific surface markers are multimerized on different Strep-Tactin® backbones. This increases the binding strength and enables stable selection of cells.

Available Fab/Nano-Streps

Species	Target	
human	CD3	Fab-Streps
	CD4	
	CD8	
	CD62L	
	CD45RA	
	CD19	
mouse	CD3	
	CD4	
	CD8	
	CD19	Nano-Strep

Examples of available MHC I-Streps

Species	Research field	Allele	Antigen	Sequence
human	Cytomegalovirus	HLA-A*0201	CMV pp65	NLVPMVATV
		HLA-B*0702	CMV pp65	TPRVTGGGAM
		HLA-A*0101	CMV pp50	VTEHDTLLY
		HLA-A*0201	CMV IE-1	VLEETSVML
		HLA-A*1101	CMV pp65	GPISGHVLK
	Tumor	HLA-A*0201	WT-1	RMFPNAPYL
		HLA-A*0201	gp100	YLEPGPVTA
		HLA-A*0201	MART 1	ELAGIGILTV
		HLA-A*0201	NY-ESO-1	SLLMWITQV
	Epstein-Barr virus (EBV)	HLA-A*0201	EBV LMP-2	CLGGLLTMV
	Influenza	HLA-A*0201	Influenza A virus M1 protein	GILGFVFTL
	SARS-CoV-2	HLA-A*0201	HIV-1 reverse transcriptase	ILKEPVHGV
	HIV	HLA-A*0201	HIV Gag	SLYNTVATL
mouse	Transgenic mouse OVA model	H-2 Kb	Ovalbumin	SIINFEKL

STREP-TACTIN® CONJUGATES FACILITATE THREE DIFFERENT ISOLATION METHODS

Depending on the Strep-Tactin® backbone that is used in the two cell isolation approaches, three methods are possible: fluorescent, magnetic or affinity chromatographic cell separation.

FLUORESCENT CELL SORTING

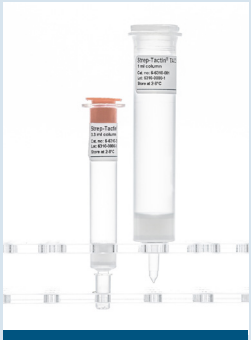
Strep-Tactin® PE/APC

MAGNETIC CELL ISOLATION

Strep-Tactin® Magnetic Microbeads

AFFINITY CHROMATOGRAPHIC CELL ISOLATION

Strep-Tactin® TACS Agarose Bulk



Strep-Tactin® TACS Agarose Columns

Accessories

10x Buffer CI is an appropriate buffer for both cell isolation approaches. TACS column adapters are available in two sizes suitable for fitting Strep-Tactin® TACS Agarose columns into standard tubes during cell isolation via affinity chromatography. Magnetic cell isolation requires a suitable magnet such as the StrepMan Magnet.

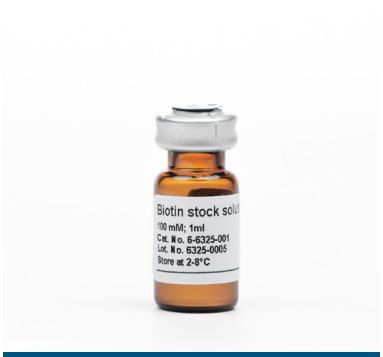
Biotin is required for both cell isolation approaches

Biotin addition causes the rapid dissociation of isolation reagents from the cell surface. Thus, fully functional, highly pure, and non-induced cells are received.

Adapters

Buffer CI

Magnet



Biotin stock solution

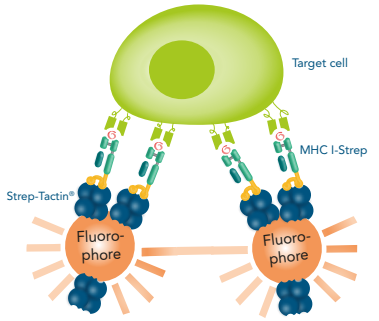
Starter Kits

Agarose Column Starter Kit

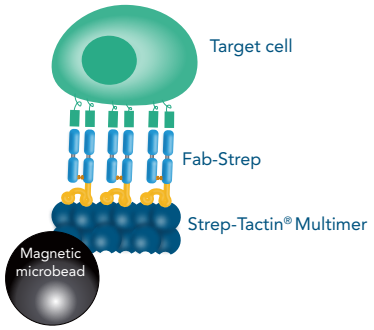
Magnetic Microbead Starter Kit

As Starter Kits available:

- Fab-TACS® / Nano-TACS® Agarose Column Starter Kit
- Fab-TACS® Magnetic Microbead Starter Kit



MHC I Streptamer® Principle



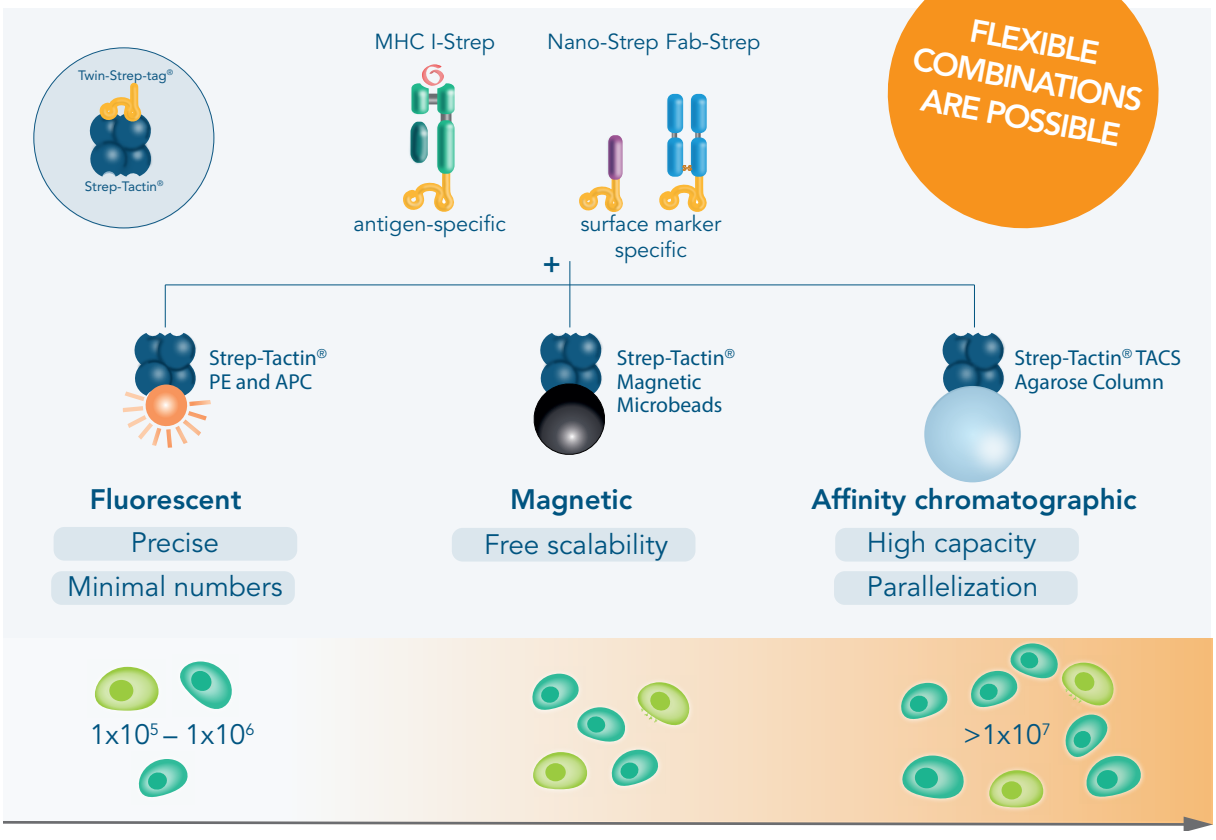
Fab-TACS® Principle

The Strep-tag® technology is the common underlying principle of all cell isolation products. Therefore it is possible to freely combine all single components permitting easy adaptation to different experiments.

Key advantages for all methods
› High purity
› High viability
› Label-free, fully functional cells
› Reversible labeling reagents
› Flexible combination of all products for different experimental requirements

Specific advantages		
Fluorescent cell sorting	Magnetic cell isolation	Affinity chromatographic cell isolation
Suitable for low cell numbers	Free scalability	Parallel isolation of several samples possible
Precise selection of populations possible		High capacity for large total or target cell numbers
		Isolation directly from whole blood or buffy coat

ONE PLATFORM - THREE METHODS FOR CELL ISOLATION



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