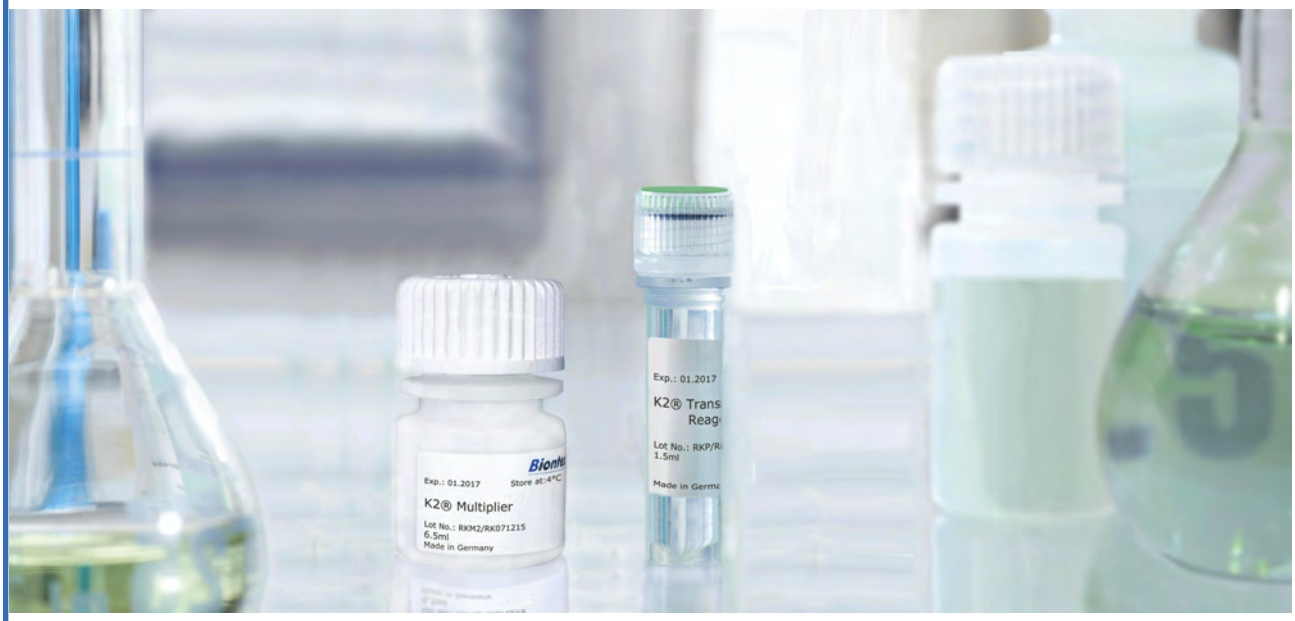
Biontex

K2® Transfection System

DNA and RNA transfection kit for mammalian cells



Highlights

- Suitable for transfection of DNA, mRNA, siRNA & miRNA
- Suitable for cotransfection of DNA & RNA
- Especially suitable for human cells
- In many cases extensive raise of transfection efficiency compared to common reagents
- Decreases the cells´ability to detect nucleic acids

Technology

Eukaryotic cells can detect foreign substances such as lipopolysaccharides, foreign DNA or RNA and foreign proteins and take defensive action against invasion by potential pathogens. Moreover, they use transmitter substances to warn neighboring cells of an attack by potentially cell-damaging substances. Transfection is always governed by these cell-specific defense mechanisms, which frequently significantly impair transfection success.

The K2® Transfection System consists of the K2® Transfection Reagent, which is based on powerful cationic lipids, and the K2® Multiplier, which decreases the cells' ability to detect foreign nucleic acids and can increase transfection efficiency as a result.

Product Specifications

Application	Transfection of mammalian cells with DNA & RNA
Content	Lipid formulation and sufficient quantity of K2® Multiplier
Assays	500 up to 1850 (48-well) per 5ml reagent (≙ ca. 400-500mg nucleic acid)

Catalog Numbers

Product	Cat. No.	Size	CHF
Test sample			
K2® Reagent	T060-0.2	200 µl	
K2® Multiplier		1.0 ml	0.-
K2® Reagent	T060-0.75	750 µl	
K2® Multiplier		1.5 ml	277.-
K2® Reagent	T060-1.0	1.5 ml	
K2® Multiplier		6.5 ml	452.-

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Description of the K2® Transfection System

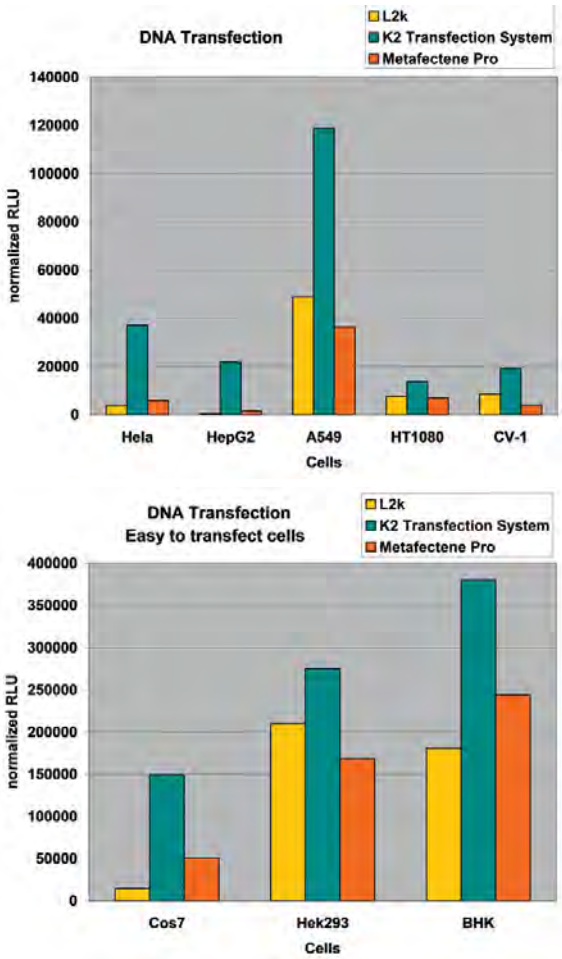
In recent years we have conducted in-depth research into the complex processes which take place during transfection. We recognized that the innate immune system is a barrier to successful transfection involving not only viral transfection systems, but also non-viral systems, such as lipofection.

Eukaryotic cells have an innate immune system which makes them able to detect foreign substances such as lipopolysacharides, bacterial or viral nucleic acids and proteins and take action to inhibit invasion by potential pathogens. Moreover, the cells announce the presence of harmful substances to neighboring cells via messenger molecules. As a consequence, these neighbors adopt defense modus without even having contact with the pathogens.

The finding that lipofection is also attacked by the defense measures of the innate immune system led us to develop the K2® Transfection System, consisting of the K2® Transfection Reagent and the K2® Multiplier. The K2® Transfection Reagent is based on powerful cationic lipids, while the Multiplier decreases the cells' ability to detect nucleic acids.

We were thus able to significantly increase transfection efficiency in comparison to traditional lipofection reagents in many cases, namely in transfection of DNA and mRNA. We observed a dramatic increase in transfection efficiency particularly frequently where the cells were of human origin.

Comparison of L2k - K2® Transfection System - Metafectene® Pro



Transfection efficiency of K2® Transfection System with pCMV-Luc compared to Metafectene® Pro and another commercial transfection reagent (L2k) under optimized conditions.

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