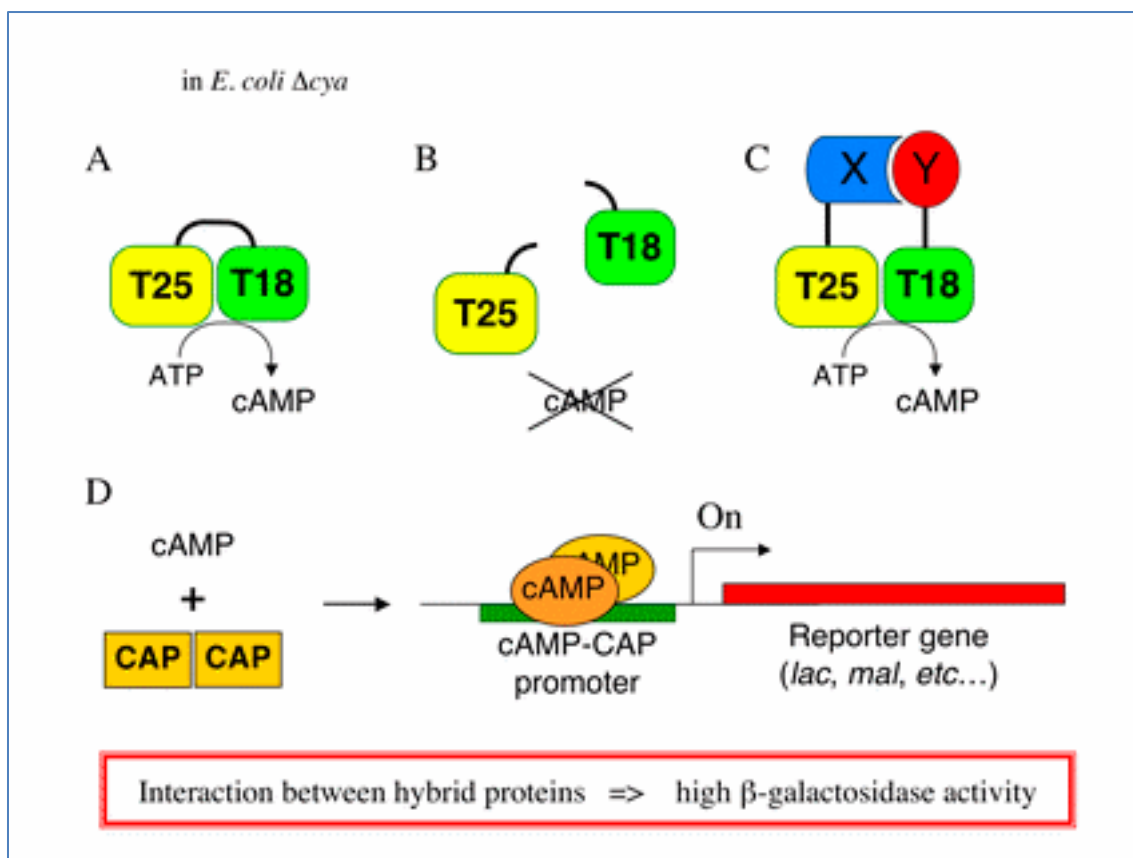


# BACTH SYSTEM KIT

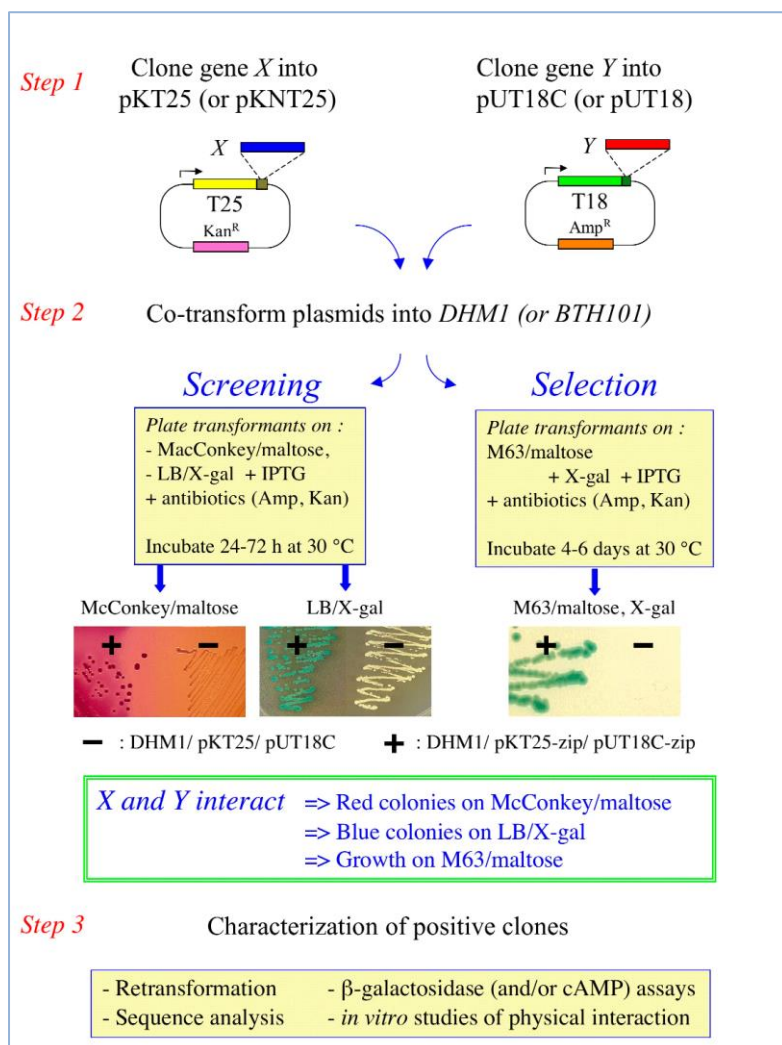
Cat N° EUK001

Euromedex bacterial two-hybrid (BACTH, for "Bacterial Adenylate Cyclase-based Two-Hybrid") system is a simple and fast approach to detect and characterize protein-protein interactions *in vivo*.



In contrast to yeast two-hybrid system, which requires specialized expertise, BACTH offers all the advantages of working with *Escherichia coli*:

- readily accessible microbiology and molecular biology techniques (plasmid preparations, efficiency of transformation, PCR...).



It exploits the fact that the catalytic domain of adenylate cyclase (CyaA) from *Bordetella pertussis* consists of two complementary fragments, T25 and T18 that are not active when physically separated.

When these two fragments are fused to interacting polypeptides, X and Y, heterodimerization of these hybrid proteins results in functional complementation between T25 and T18 fragments and, therefore, cAMP synthesis.

Cyclic AMP produced by the reconstituted chimeric enzyme binds to the catabolite activator protein, CAP. The cAMP/CAP complex is a pleiotropic regulator of gene transcription in *E. coli*. It turns on the expression of several resident genes, including genes of the *lac* and *mal* operons involved in lactose and maltose catabolism. Therefore, bacteria become able to utilize lactose or maltose as the unique carbon source and can be easily distinguished on indicator or selective media.

### Components of the kit

#### BACTH strains

BTH101, LB/DMSO stock (reporter strain for BACTH assay) 1 ml EUB001

DHM1, LB/DMSO stock (reporter strain for BACTH assay) 1 ml EUB002

#### BACTH vectors

pKNT25, supercoiled, 10  $\mu$ g (0,5  $\mu$ g/ $\mu$ l in TE buffer) 20  $\mu$ l EUP-25N

pKT25, supercoiled, 10  $\mu$ g (0,5  $\mu$ g/ $\mu$ l in TE buffer) 20  $\mu$ l EUP-25C

pUT18, supercoiled, 10  $\mu$ g (0,5  $\mu$ g/ $\mu$ l in TE buffer) 20  $\mu$ l EUP-18N

pUT18C, supercoiled, 10  $\mu$ g (0,5  $\mu$ g/ $\mu$ l in TE buffer) 20  $\mu$ l EUP-18C

#### Control plasmids

pKT25-zip, supercoiled, 1  $\mu$ g (0,05  $\mu$ g/ $\mu$ l in TE buffer) 20  $\mu$ l EUP-25Z

pUT18C-zip, supercoiled, 1  $\mu$ g (0,05  $\mu$ g/ $\mu$ l in TE buffer) 20  $\mu$ l EUP-18Z

Store at - 20 °C

*The BACTH system has been developed by the group of Dr. D. Ladant at the Pasteur Institute (Karimova et al., 1998, Proc. Natl. Acad. Sci. U.S.A. 95:5752).*

**EUROMEDEX**

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