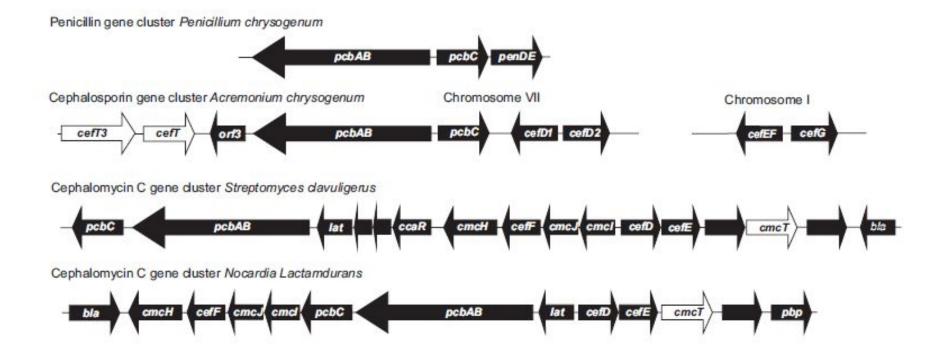
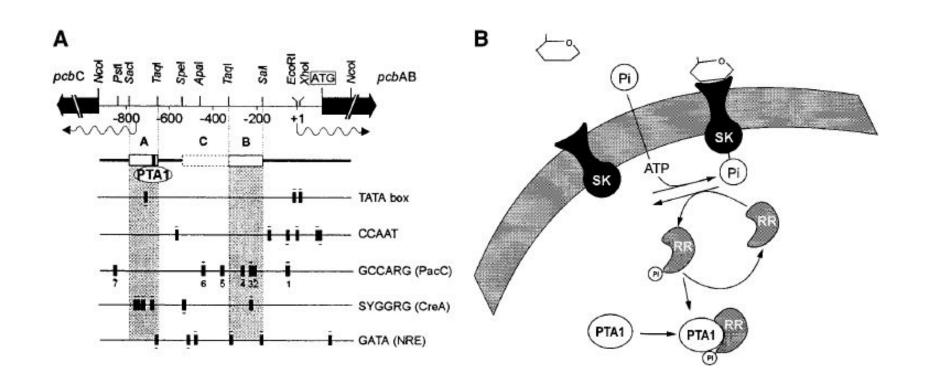
Regulation of Penicillin Biosynthesis

L-a-Aminoadipic acid + L-Cysteine + L-Valine L-Lysine (acvA / pchAB) δ(L-α-Aminoadipyl)-L-cysteinyl-D-valine (LLD-ACV) 0 HOOC IPN SYNTHASE (ipn4 / pcbC) Isopenicillin N (IPN) HOOC ACYL CoA: IPN ACYLTRANSFERASE IPN EPIMERASE (autA/ penDE) (cefD)Penicillin N L-a-Aminoadipic acid (L-ts-AAA) 6-Aminopenicillanic acid 0 HOOC DAOC SYNTHETASE (cefEF) COOR Deacetoxycephalosporin C (DAOC) ACYL CoA: IPN Phenylacetate 0 ACYLTRANSFERASE HOOC PHENYL-(autAl penDE) CoA-LIGASE Phenyl-COOR DAOC SYNTHETASE acetyl-CoA (cefEF) HSC0A Deacetylcephalosporin C (DAC) Penicillin G R - HHOOC CH-OR COOR

Beta-Lactum gene clusters



Regulation of Penicillin Biosynthesis



Regulation of Penicillin Biosynthesis

