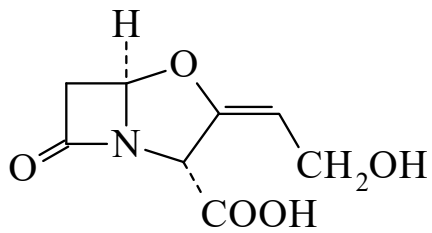
>>**Entry Name: Clavulanic acid,** BAN, INN
Synonym(s): 3-(2-Hydroxyethylidene)-7-oxo-4-oxa-1-azabicyclo[3.2.0]heptane-2-carboxylic acid, 9CI. Clavubactam



(*E*)-*form*

Related CAS Registry Numbers(s): 60802-63-3 61177-42-2 61177-43-3 61177-44-4 61177-46-6 61970-10-3 66428-09-9 67529-22-0 79198-29-1

Molecular Formula: $C_8H_9NO_5$
Molecular Weight: 199.163
Accurate Mass: 199.048074
Percentage Composition: C 48.25%; H 4.55%; N 7.03%; O 40.17%
General Statement: β-Lactam antibiotic
Calculated Log P Data: Log P –1.51 (calc)

>>**Variant:** (*E*)-form
Synonym(s): Isoclavulanic acid
CAS Registry Number: 62319-53-3
Molecular Formula: $C_8H_9NO_5$
Molecular Weight: 199.163
Accurate Mass: 199.048074
Percentage Composition: C 48.25%; H 4.55%; N 7.03%; O 40.17%

>>**Derivative:** Me ester

CAS Registry Number: 66428-10-2
Molecular Formula: $C_9H_{11}NO_5$
Molecular Weight: 213.19
Accurate Mass: 213.063724
Percentage Composition: C 50.71%; H 5.20%; N 6.57%; O 37.52%
Physical Description: Oil
Optical Rotation: $[\alpha]_D^{22}$+38.4 (c, 1.77 in MeOH)

>>**Derivative:** *p*-Bromobenzyl ester

CAS Registry Number: 60802-62-2
Molecular Formula: $C_{15}H_{14}BrNO_5$
Molecular Weight: 368.183
Percentage Composition: C 48.93%; H 3.83%; Br 21.70%; N 3.80%; O 21.73%
Physical Description: Thin rods (CH_2Cl_2/CCl_4)
Melting Point: Mp 134-134.5°
Optical Rotation: $[\alpha]_D^{25}$+23 (c, 1.16 in MeOH)

>>**Variant:** (*Z*)-form
Synonym(s): MM 14151. BRL 14440. Antibiotic MM 14151. Antibiotic 3008B
CAS Registry Number: 58001-44-8

Molecular Formula: $C_8H_9NO_5$
Molecular Weight: 199.163
Accurate Mass: 199.048074
Percentage Composition: C 48.25%; H 4.55%; N 7.03%; O 40.17%
Biological Source: Metab. of *Streptomyces clavuligerus, Streptomyces jumonjinensis* and *Streptomyces katsurahamanus*
Biological Use/Importance: Potent inhibitor of β-lactamases produced by gram-positive and -negative bacteria. Weak antibacterial activity. Enhances antibiotic activity of penicillins and cephalosporins when co-administered
Physical Description: Unstable oil

>>**Derivative:** Na salt

CAS Registry Number: 57943-81-4
Physical Description: Feathery needles + $4H_2O$ (Me_2CO aq.)
Melting Point: Mp 68°