

Amino-acizi naturali

Amino-acizii sunt combinatii organice care contin in molecula una sau mai multe grupe amino si una sau mai multe grupe carboxil. Dupa structura, amino-acizii se impart in doua mari categorii:

1. Alifatici: unde grupele functionale sunt legate de o catena alifatica, chiar daca in molecula exista un nucleu aromatic.
2. Aromatici: unde grupele functionale sunt legate de un ciclu aromatic.

Dupa asezarea relativa a grupelor functionale se deosebesc α -amino-acizi, β -amino-acizi, γ -amino-acizi, etc. Dintre amino-acizii alifatici, cei mai importanti sunt α -amino-acizi, adica acei amino-acizi care contin grupele functionale legate de acelasi atom de carbon. Se deosebesc mai multe categorii mari de α -amino-acizi alifatici:

1. monocarboxilici
2. dicarboxilici
3. hidroxi-amino-acizi
4. tioamino-acizi
5. diamino-acizi
6. amino-acizi heterociclici

<u>Denumirea</u>	<u>Prescurtarea</u>	<u>Formula</u>
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Amino-acizi monocarboxilici

Leucina (acidul α -aminoizocapronic)	Leu	$\begin{array}{c} \text{CH}_3 - \text{CH} - \text{CH}_2 - \text{CH} - \text{COOH} \\ \qquad \qquad \\ \text{CH}_3 \qquad \qquad \text{NH}_2 \end{array}$
Izoleucina (acidul α -amino- β -metilvalerianic)	Ileu	$\begin{array}{c} \text{CH}_3 - \text{CH}_2 - \text{CH} - \text{CH} - \text{COOH} \\ \qquad \\ \text{CH}_3 \qquad \text{NH}_2 \end{array}$
Fenilalanina (acidul α -amino- β -fenil-propionic)	Fe	$\begin{array}{c} \text{C}_6\text{H}_5 - \text{CH}_2 - \text{CH} - \text{COOH} \\ \\ \text{NH}_2 \end{array}$
Glicocolul(glicina) (acidul aminoacetic)	Gli	$\begin{array}{c} \text{CH}_2 - \text{COOH} \\ \\ \text{NH}_2 \end{array}$
Alanina (acidul α -aminopropionic)	Ala	$\begin{array}{c} \text{CH}_3 - \text{CH} - \text{COOH} \\ \\ \text{NH}_2 \end{array}$
Valina (acidul α -aminoizovalerianic)	Val	$\begin{array}{c} \text{CH}_3 - \text{CH} - \text{CH} - \text{COOH} \\ \qquad \\ \text{CH}_3 \qquad \text{NH}_2 \end{array}$

Amino-acizi dicarboxilici

Acidul asparagic (acidul aminosuccinic)	Asp	$\text{HOOC}-\text{CH}_2-\underset{\substack{ \\ \text{NH}_2}}{\text{CH}}-\text{COOH}$
Acidul glutamic (acidul α -aminoglutaric)	Glu	$\text{HOOC}-\text{CH}_2-\underset{\substack{ \\ \text{NH}_2}}{\text{CH}}-\text{COOH}$

Hidroxi-amino-acizi

Treonina (acidul α -amino- β -hidroxibutiric)	Tr	$\text{CH}_3-\underset{\substack{ \\ \text{OH}}}{\text{CH}}-\underset{\substack{ \\ \text{NH}_2}}{\text{CH}}-\text{COOH}$
Tirosina (acidul α -amino- β -hidroxifenil-propionic)	Ti	$\text{HO} \text{---} \text{C}_6\text{H}_4 \text{---} \underset{\substack{ \\ \text{NH}_2}}{\text{CH}}-\text{COOH}$
Serina (acidul α -amino- β -hidroxipropionic)	Ser	$\text{CH}_2-\underset{\substack{ \\ \text{OH}}}{\text{CH}}-\underset{\substack{ \\ \text{NH}_2}}{\text{COOH}}$

Tio-amino-acizi

Cistina (acidul di[α -amino- β -tiopropionic])	$\text{Ci}-\text{S}$ $\text{Ci}-\text{S}$	$\text{HOOC}-\underset{\substack{ \\ \text{NH}_2}}{\text{CH}}-\text{CH}_2-\text{S}-\text{S}-\underset{\substack{ \\ \text{NH}_2}}{\text{CH}}-\text{CH}_2-\text{COOH}$
Metionina (acidul α -amino- γ -metiltiobutiric)	Met	$\text{CH}_2-\underset{\substack{ \\ \text{S}-\text{CH}_3}}{\text{CH}}-\underset{\substack{ \\ \text{NH}_2}}{\text{COOH}}$

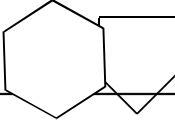
Cisteina (acidul α -amino- β -tiopropionic)	Cis	$\begin{array}{c} \text{CH}_2 - \text{CH} - \text{COOH} \\ \quad \\ \text{SH} \quad \text{NH}_2 \end{array}$
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Diamino-acizi

Ornitina (acidul α , δ -diaminovalerianic)	Or	$\begin{array}{c} \text{CH}_2 - \text{CH}_2 - \text{CH}_2 - \text{CH} - \text{COOH} \\ \qquad \qquad \qquad \\ \text{NH}_2 \qquad \qquad \qquad \text{NH}_2 \end{array}$
Lisina (acidul α , ϵ -diaminocapronic)	Lis	$\begin{array}{c} \text{CH}_2 - \text{CH}_2 - \text{CH}_2 - \text{CH}_2 - \text{CH} - \text{COOH} \\ \qquad \qquad \qquad \qquad \qquad \\ \text{NH}_2 \qquad \qquad \qquad \qquad \qquad \text{NH}_2 \end{array}$

Amino-acizi heterociclici

Prolina (acidul pirolidin- α -carboxilic)	Pro	$\begin{array}{c} \text{H}_2\text{C} - \text{CH}_2 \\ \quad \\ \text{H}_2\text{C} \quad \text{CH} - \text{COOH} \\ \backslash \quad / \\ \text{NH} \end{array}$
Hidroxirolina (acidul β -hidroxirolidin- α -carboxilic)	Hipro	$\begin{array}{c} \text{HO} - \text{HC} - \text{CH}_2 \\ \quad \\ \text{H}_2\text{C} \quad \text{CH} - \text{COOH} \\ \backslash \quad / \\ \text{NH} \end{array}$
Histidina (acidul α -amino- β -imidazolil-(4)-propionic) (imidazolil-(4)-alanina)	His	$\begin{array}{c} \text{N} - \text{C} - \text{CH}_2 - \text{CH} - \text{COOH} \\ \quad \qquad \\ \text{HC} \quad \text{CH} \quad \text{NH}_2 \\ \backslash \quad / \\ \text{NH} \end{array}$

<p style="text-align: center;">Triptofanul (acidul α-amino-β-indolil-(3)-propionic) (indolil-(3)-alanina)</p>	<p>Tri</p>	<div style="display: flex; align-items: center; justify-content: center;">  <div style="text-align: center;"> $\begin{array}{c} \text{--- CH}_2\text{--- CH--- COOH} \\ \\ \text{NH}_2 \end{array}$ </div> </div>
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