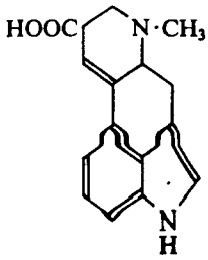
MeOH. M.p. 168° corr. Absorption maxima at 5470, 5070, 4730 Å in CS_2.
Ac: violet-red needles from C_6H_6–MeOH. M.p. 137° corr.

Zechmeister, Cholnoky, *Ber.*, 1936, **69**, 422.

Lygosin. *See* 1 : 5-Di-2-hydroxyphenyl-1 : 4-pentadien-3-one.

Lysergic Acid



$C_{16}H_{16}O_2N_2$ MW 268

(+)-.
Leaflets + H_2O from H_2O. M.p. 238° decomp. $[\alpha]_D^{20}$ +40° in Py.
B,HCl: cryst. from H_2O. M.p. 208–10° decomp.
Me ester: $C_{17}H_{18}O_2N_2$. MW 282. Leaflets from C_6H_6. M.p. 168°.
Hydrazide: prisms from MeOH. M.p. 218° decomp. $[\alpha]_D^{20}$ +11°.
Amide: ergine. $C_{16}H_{17}ON_3$. MW 265. Degradation product of several of the ergot alkaloids. Cryst. + 1MeOH from MeOH. M.p. 135° decomp. Prisms + $2H_2O$ from Me_2CO.Aq. M.p. 115° decomp. $[\alpha]_{5461}^{20}$ +598° in $CHCl_3$.
α-*Hydroxyethylamide*: $C_{18}H_{21}O_2N_3$. MW 311. Produced in submerged culture by *Claviceps paspati* Stevens and Hall. M.p. 135° decomp. $[\alpha]_D^{20}$ +29° ± 2° (c, 1 in H·CONMe$_2$). Light absorption: $\lambda_{max.}$ 241, 312 mμ.
B,HCl: plates from MeOH. M.p. 255–60° decomp.
B,HBr: prisms from Me_2CO–Et_2O. M.p. 260° decomp. $[\alpha]_{5461}^{20}$ +349° in H_2O. *B,HClO$_4$*: needles from EtOH. M.p. 225° decomp.
Dimethylamide: m.p. 198°.
Anilide: m.p. 192°.
(−)-.
Leaflets + H_2O from H_2O. M.p. 235–40° decomp. $[\alpha]_D^{20}$ −40° in Py.
Hydrazide: m.p. 218°. $[\alpha]_D^{20}$ −11°.
All forms-.
Spar. sol. most org. solvents. Amphoteric. Give characteristic blue Keller test of ergot alkaloids.

Smith, Timmis, *J. Chem. Soc.*, 1932, 1543; *Nature*, 1934, **133**, 579.
Jacobs *et al.*, *J. Biol. Chem.*, 1934, **104**, 549; **106**, 396; 1936, **113**, 759; 1938, **125**, 289; 1942, **145**, 487. *J. Org. Chem.*, 1945, **10**, 76.
King, Stiller, *J. Chem. Soc.*, 1937, 466.
Hofmann, *Helv. Chim. Acta*, 1947, **30**, 44, 163.
Stoll, Hofmann, Troxler, *Helv. Chim. Acta*, 1949, **32**, 506.
Stenlake, *J. Chem. Soc.*, 1955, 1626.
Arcamone *et al.*, *Proc. Roy. Soc.*, 1961, **155B**, 26.

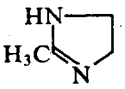
(+)-Lysergyl-L-valine methyl ester

$C_{22}H_{27}O_3N_3$ MW 385

Ergot alkaloid. Amorph. M.p. 80–5°. $[\alpha]_D^{20}$ −103° ± 2° (c, 1·6 in $CHCl_3$). −65° ± 2° (c, 1·4 in Py). Light absorption: $\lambda_{max.}$ 225 (log ε, 4·3) and 311 mμ (3·94).
Hydrogen maleate: needles from Me_2CO. M.p. 185° decomp. $[\alpha]_D^{20}$ +38° (c, 1·2 in EtOH : H_2O 1 : 1).

Schlientz, Brunner, Hofmann, *Experientia*, 1963, **19**, 397.

Lysidine (4 : 5-*Dihydro-2-methylimidazole*)



$C_4H_8N_2$ MW 84

Cryst. M.p. 105° (85°, 103°). B.p. 195–8° (221–4°). Sol. H_2O, EtOH. Prac. insol. Et_2O. Aromatic sulphonyl chlorides and carboxylic acid chlorides → acyl derivs. of ethylenediamine. Used as uric acid eliminant.
B,HCl,2HgCl$_2$: prisms from hot H_2O. M.p. 162–3°.
p-*Nitrobenzenesulphonyl deriv.*: m.p. 125–6°. Ring readily opened.

Ladenburg, *Ber.*, 1894, **27**, 2952; 1895, **28**, 3068.
Zienty, *J. Am. Chem. Soc.*, 1945, **67**, 1138.
Kyrides, *Chem. Abstracts*, 1946, **40**, 1972.

Lysine (2 : 6-*Diaminocaproic acid*, 2 : 6-*diaminohexanoic acid*)

$H_2N{\cdot}CH_2{\cdot}CH_2{\cdot}CH_2{\cdot}CH_2{\cdot}CH(NH_2){\cdot}COOH$

$C_6H_{14}O_2N_2$ MW 146

L-.
Obtained by hyd. of casein, egg albumen, fibrin, gelatin, blood corpuscles, and seeds of some conifers. Found in beet molasses. Needles from H_2O or dil. EtOH. Darkens at 210°. M.p. 224–5° decomp. $[\alpha]_D^{20}$ +14·6°. Very sol. H_2O. Prac. insol. EtOH. $k_e = 4{\cdot}9 \times 10^{-12}$ at 0°, $2{\cdot}95 \times 10^{-11}$ at 25°: $k_{b_1} = 7{\cdot}4 \times 10^{-6}$ at 0°, $0{\cdot}89 \times 10^{-5}$ at 25°: $k_{b_2} = 1{\cdot}82 \times 10^{-13}$ at 0°, $1{\cdot}52 \times 10^{-12}$ at 25°. Isoelectric point pH 10·56 at 0°, 9·74 at 25°. $Ba(OH)_2$ at 150° or HCl at 165–70° → DL-lysine. Heat → pentamethylenediamine. $Ba(MnO_4)_2$ → glutaric, glutamic, oxalic, and hydrocyanic acids. KOH fusion → propionic and acetic acids.
B,HCl: m.p. 235–6°. Acid reaction.
B,2HCl: cryst. from dil. HCl. M.p. 193°. $[\alpha]_D^{20}$ +15·3° in H_2O. Neutral reaction.
6-N-*Benzoyl*: m.p. 235°. $[\alpha]_D^{19}$ +20·12° in HCl.Aq.
2-N : 6N-*Dibenzoyl*: *see* L-Lysuric Acid.
Benzylidene deriv.: m.p. 205–6°.
B,H$_2$PtCl$_6$,EtOH: yellow prisms. Decomp. at 120°.
B$_2$,3HAuCl$_4$,HCl,2H$_2$O: sinters at 120°. M.p. 152–5°.
Picrate: cryst. from H_2O. M.p. 266° decomp. Spar. sol. EtOH.
DL-.
B,HCl: m.p. 235–6°.
B,2HCl: cryst. M.p. 188–90° (183–6°). Sol. H_2O.
2-N-*Benzoyl*: needles. M.p. 235° (235–49°). Sol. hot H_2O. Spar. sol. EtOH. Insol. Et_2O, $CHCl_3$, C_6H_6.
6-N-p-*Toluenesulphonyl*: m.p. 140°.
6-N-*Benzoyl*: cryst. from H_2O. M.p. 254° (263–8°, 265–70°). 2-N-p-*Toluenesulphonyl*: m.p. 199°.
2 : 6-*Dibenzoyl*: *see* DL-Lysuric Acid.
2-N-*Me*: *B,HCl*, m.p. 244–5°. *B,HI*: m.p. 239–41°. *Picrolonate*: m.p. 243–5°.
6-N-*Me*: *picrate*, m.p. 227° decomp. *Picrolonate*: m.p. 228° decomp.
2-N-*Me*-6-*benzoyl*: m.p. 234°.