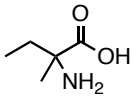
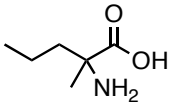
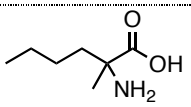
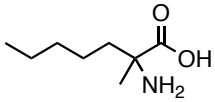
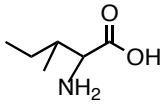
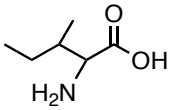
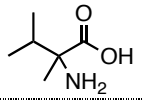
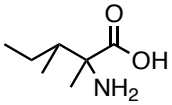
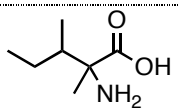
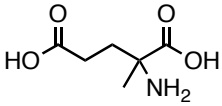
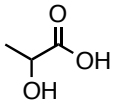
THE ABUNDANCE AND DISTRIBUTION OF ENATIOMERIC EXCESSES IN METEORITIC SOLUBLE ORGANIC COMPOUNDS. S. Pizzarello [1]Dpt. of Chemistry&Biochemistry Arizona State University Tempe AZ 85287 pizzar@asu.edu;

The enantiomeric excesses determined for amino-, and hydroxy acids in carbonaceous chondrite meteorites represent to date the only case of molecular asymmetry measured outside the biosphere, e.g., see [1] for a review. Because of the chiral homogeneity of life's structures and functions, the findings have been debated for the possible relevance that a-biotic chiral symmetry-breaking might have had for the origin of terrestrial homochirality, e.g., [2].

The data currently available (see Figure) as well as presently under completion will be discussed in view of the hypotheses put forward for the origin of extraterrestrial chiral asymmetry and examine whether they are consistent with our understanding of pre-biotic chemical evolution.

References: [1] Pizzarello S. and Groy T. L. (2011) *Geochim. Cosmochim. Acta 75* 645-656. [2] W. A. Bonner et al. (1999) *Orig. Life Evol. Biosph. 29*, 329-332.

Compounds displaying enantiomeric excesses (ee) in carbonaceous chondrites.

Amino Acid formula	ee%	Distribution[1]
	L- 2.5-19.6	MN, MY, OR, GRA 95229*
	L- 1.4-2.8	MN, MY
	L- 1.8	MN, MY
	L- 7.0	MN
	L- 11-7	MN, MY GRA95229 LAP02342
	D- 12-9	MN, MY GRA95229 LAP02342
	L- 1.0	MN, MY
	L- 1.4-5.2	MN, MY
	L- 2.2-10.4	MN, MY
	L- 3-2	MN
	L- 3.0-12-3	MN, GRA95229 LAP 02342

[1]MN, Murchison; MY, Murray, OR, Orgueil.