One important factor in chemical evolution is related to random chemical synthesis versus more selective pathways forming compounds of biological relevance. A biased synthesis mechanisms would induce a much smaller sequence space in comparison with a sequence space derived from a purely random synthesis. Such conditions in turn would render more feasible the emergence of a chemical system compatible with life. We have been working, from the theoretical perspective, with an oligomerization process of a set of amino acids under thermal anhydrous conditions, aiming to simulate a prebiotic environment. We have been particularly interested on the sequences produced in such processes. As it is known that amino acids have been detected in the interstellar medium, we address the question if it feasible to have any degree of polymerization of amino acids in the interstellar medium under dry, low temperature and pressure conditions.