In addition to supplying amino acids and energy, essential for growth and maintenance, food proteins can be an important source of biologically active peptides, including angiotensin converting enzyme (ACE) inhibitors. In this work, the ACE-inhibitory activity and antihypertensive activity of hydrolysates from different sources were investigated in spontaneously hypertensive rats (SHR). Commercial hydrolysates from the following protein sources were studied: casein, milk whey, wheat gluten, soybean, and collagens from bovine and porcine origins. The two most potent hydrolysates were derived from milk whey proteins, coded WE80BG with IC\textsubscript{50} value of 0.12 mg of protein/mL, and Hypro8052 with IC\textsubscript{50} value of 0.13 mg of protein/mL. The first one showed resistance to \textit{in vitro} digestion by gastrointestinal proteases, and one of the most significant reductions in the blood pressure of SHR, -21 ± 2.1 mmHg, 5h after oral administration of 250mg/kg. Independent of their protein source, all hydrolysates analysed were capable of inducing a significant reduction in the blood pressure of SHR. Nevertheless, the hydrolysed bovine and porcine collagens showed a better ACE-inhibitory activity after \textit{in vitro} digestion with gastrointestinal enzymes, when compared with original hydrolysates, and their effect on SHR was ameliorated administrating the higher dose of 500mg/kg. The results confirmed the biological activity attributed mainly to milk proteins, and show that commercially available hydrolysates of several sources can provide anti-hypertensive peptides on a diet.