Soybean cake, byproduct obtained during the processing of soybean oil, was found to be a rich source of isoflavones. However, the variety of other functional components present in soybean cake remains unknown. Bioactive peptides that perform functional activities in individuals have been characterized and isolated from numerous sources of dietary protein, including soy. The objective of this study was to optimize the extraction of soy protein cake for later obtaining bioactive peptides. An experimental design (rotational center) of 12 trials was performed, with the variables pH (4.0 to 9.0) and NaCl concentration (0.0 to 2.0 M). The soybean cake dry and defatted was ground in a knife mill. We tested the proportions of soybean cake and buffer as 5g/30 mL, 8.33 g/50mL and 5g/100mL for the extraction. The samples were homogenized in a blender and then filtered through cotton filter. The filtrate was subjected to centrifugation at 4000 xg for 15 min. The determination of protein concentration in the supernatant was made by Lowry’s method. The obtained results were analyzed by the response surface methodology where it was observed that the NaCl concentration is inversely proportional to the pH of the buffer solution. Thus the best results of extraction in protein/100g of sample were obtained at alkaline pH, without the addition of NaCl. It was concluded then that the proteins were optimally extracted from soybean cake applying the following conditions: 5 g of cake to 100mL of buffer at pH 9.0 without addition of NaCl yielding 11.33g/100g of soybean cake.