The central theme of this thesis is the construction of simultaneous confidence regions (SCR) corresponding to stepwise multiple comparison procedures (MCP). The first chapter is devoted to the theory of multiple comparisons, including the class of closed testing procedures which contains every MCP that strongly controls the familywise error rate. The second chapter is concerned with the general principle of construction of SCR corresponding to closed testing procedures. These general results are used in the third and the forth chapter for deriving the SCR corresponding to a subclass of closed testing procedures which are based on weighted Bonferroni tests. The SCR corresponding to the Holm, the Holm(W), the fixed-sequence and the fallback MCP are derived explicitly. The theoretical results are numerically illustrated on a bioequivalence study. In the fifth chapter we briefly discuss the SCR corresponding to the Hommel, the Hochberg and the step-down Dunnett MCP.