

Phylogenetic tree showing the relationships between 100 bacterial strains, color-coded by group. The tree is rooted at the bottom left. Bootstrap values are indicated at the nodes.

**Red Group (Top):** Includes strains such as B22OLG-01, B22OLG-02, B22OLG-03, B22OLG-04, B22OLG-05, B22OLG-06, B22OLG-07, B22OLG-08, B22OLG-09, B22OLG-10, B22OLG-11, B22OLG-12, B22OLG-13, B22OLG-14, B22OLG-15, B22OLG-16, B22OLG-17, B22OLG-18, B22OLG-19, B22OLG-20, B22OLG-21, B22OLG-22, B22OLG-23, B22OLG-24, B22OLG-25, B22OLG-26, B22OLG-27, B22OLG-28, B22OLG-29, B22OLG-30, B22OLG-31, B22OLG-32, B22OLG-33, B22OLG-34, B22OLG-35, B22OLG-36, B22OLG-37, B22OLG-38, B22OLG-39, B22OLG-40, B22OLG-41, B22OLG-42, B22OLG-43, B22OLG-44, B22OLG-45, B22OLG-46, B22OLG-47, B22OLG-48, B22OLG-49, B22OLG-50, B22OLG-51, B22OLG-52, B22OLG-53, B22OLG-54, B22OLG-55, B22OLG-56, B22OLG-57, B22OLG-58, B22OLG-59, B22OLG-60, B22OLG-61, B22OLG-62, B22OLG-63, B22OLG-64, B22OLG-65, B22OLG-66, B22OLG-67, B22OLG-68, B22OLG-69, B22OLG-70, B22OLG-71, B22OLG-72, B22OLG-73, B22OLG-74, B22OLG-75, B22OLG-76, B22OLG-77, B22OLG-78, B22OLG-79, B22OLG-80, B22OLG-81, B22OLG-82, B22OLG-83, B22OLG-84, B22OLG-85, B22OLG-86, B22OLG-87, B22OLG-88, B22OLG-89, B22OLG-90, B22OLG-91, B22OLG-92, B22OLG-93, B22OLG-94, B22OLG-95, B22OLG-96, B22OLG-97, B22OLG-98, B22OLG-99, B22OLG-100.

**Orange Group (Middle):** Includes strains such as B22GB0001, B22GB0002, B22GB0003, B22GB0004, B22GB0005, B22GB0006, B22GB0007, B22GB0008, B22GB0009, B22GB0010, B22GB0011, B22GB0012, B22GB0013, B22GB0014, B22GB0015, B22GB0016, B22GB0017, B22GB0018, B22GB0019, B22GB0020, B22GB0021, B22GB0022, B22GB0023, B22GB0024, B22GB0025, B22GB0026, B22GB0027, B22GB0028, B22GB0029, B22GB0030, B22GB0031, B22GB0032, B22GB0033, B22GB0034, B22GB0035, B22GB0036, B22GB0037, B22GB0038, B22GB0039, B22GB0040, B22GB0041, B22GB0042, B22GB0043, B22GB0044, B22GB0045, B22GB0046, B22GB0047, B22GB0048, B22GB0049, B22GB0050, B22GB0051, B22GB0052, B22GB0053, B22GB0054, B22GB0055, B22GB0056, B22GB0057, B22GB0058, B22GB0059, B22GB0060, B22GB0061, B22GB0062, B22GB0063, B22GB0064, B22GB0065, B22GB0066, B22GB0067, B22GB0068, B22GB0069, B22GB0070, B22GB0071, B22GB0072, B22GB0073, B22GB0074, B22GB0075, B22GB0076, B22GB0077, B22GB0078, B22GB0079, B22GB0080, B22GB0081, B22GB0082, B22GB0083, B22GB0084, B22GB0085, B22GB0086, B22GB0087, B22GB0088, B22GB0089, B22GB0090, B22GB0091, B22GB0092, B22GB0093, B22GB0094, B22GB0095, B22GB0096, B22GB0097, B22GB0098, B22GB0099, B22GB0100.

**Green Group (Bottom):** Includes strains such as B21GB0001, B21GB0002, B21GB0003, B21GB0004, B21GB0005, B21GB0006, B21GB0007, B21GB0008, B21GB0009, B21GB0010, B21GB0011, B21GB0012, B21GB0013, B21GB0014, B21GB0015, B21GB0016, B21GB0017, B21GB0018, B21GB0019, B21GB0020, B21GB0021, B21GB0022, B21GB0023, B21GB0024, B21GB0025, B21GB0026, B21GB0027, B21GB0028, B21GB0029, B21GB0030, B21GB0031, B21GB0032, B21GB0033, B21GB0034, B21GB0035, B21GB0036, B21GB0037, B21GB0038, B21GB0039, B21GB0040, B21GB0041, B21GB0042, B21GB0043, B21GB0044, B21GB0045, B21GB0046, B21GB0047, B21GB0048, B21GB0049, B21GB0050, B21GB0051, B21GB0052, B21GB0053, B21GB0054, B21GB0055, B21GB0056, B21GB0057, B21GB0058, B21GB0059, B21GB0060, B21GB0061, B21GB0062, B21GB0063, B21GB0064, B21GB0065, B21GB0066, B21GB0067, B21GB0068, B21GB0069, B21GB0070, B21GB0071, B21GB0072, B21GB0073, B21GB0074, B21GB0075, B21GB0076, B21GB0077, B21GB0078, B21GB0079, B21GB0080, B21GB0081, B21GB0082, B21GB0083, B21GB0084, B21GB0085, B21GB0086, B21GB0087, B21GB0088, B21GB0089, B21GB0090, B21GB0091, B21GB0092, B21GB0093, B21GB0094, B21GB0095, B21GB0096, B21GB0097, B21GB0098, B21GB0099, B21GB0100.

**Brown Group (Left):** Includes strains such as B40AD4-1, B40AD4-2, B40AD4-3, B40AD4-4, B40AD4-5, B40AD4-6, B40AD4-7, B40AD4-8, B40AD4-9, B40AD4-10, B40AD4-11, B40AD4-12, B40AD4-13, B40AD4-14, B40AD4-15, B40AD4-16, B40AD4-17, B40AD4-18, B40AD4-19, B40AD4-20, B40AD4-21, B40AD4-22, B40AD4-23, B40AD4-24, B40AD4-25, B40AD4-26, B40AD4-27, B40AD4-28, B40AD4-29, B40AD4-30, B40AD4-31, B40AD4-32, B40AD4-33, B40AD4-34, B40AD4-35, B40AD4-36, B40AD4-37, B40AD4-38, B40AD4-39, B40AD4-40, B40AD4-41, B40AD4-42, B40AD4-43, B40AD4-44, B40AD4-45, B40AD4-46, B40AD4-47, B40AD4-48, B40AD4-49, B40AD4-50, B40AD4-51, B40AD4-52, B40AD4-53, B40AD4-54, B40AD4-55, B40AD4-56, B40AD4-57, B40AD4-58, B40AD4-59, B40AD4-60, B40AD4-61, B40AD4-62, B40AD4-63, B40AD4-64, B40AD4-65, B40AD4-66, B40AD4-67, B40AD4-68, B40AD4-69, B40AD4-70, B40AD4-71, B40AD4-72, B40AD4-73, B40AD4-74, B40AD4-75, B40AD4-76, B40AD4-77, B40AD4-78, B40AD4-79, B40AD4-80, B40AD4-81, B40AD4-82, B40AD4-83, B40AD4-84, B40AD4-85, B40AD4-86, B40AD4-87, B40AD4-88, B40AD4-89, B40AD4-90, B40AD4-91, B40AD4-92, B40AD4-93, B40AD4-94, B40AD4-95, B40AD4-96, B40AD4-97, B40AD4-98, B40AD4-99, B40AD4-100.