(56) **References Cited**

U.S. PATENT DOCUMENTS

4,256,925 A 3/1981 Goode et al.
4,261,054 A 4/1981 Scharla-Nielsen et al.
4,309,764 A 1/1982 Acampora et al.
4,383,315 A 5/1983 Torng et al.
4,491,947 A 1/1985 Frank et al.
4,495,619 A 1/1985 Acampora et al.
4,495,648 A 1/1985 Giger et al.
4,547,880 A 10/1985 De Vita et al.
4,675,863 A 6/1987 Paneth et al.
4,720,829 A 1/1988 Fukasawa et al.
4,756,007 A 7/1988 Qureshi et al.
4,785,450 A 11/1988 Bolgiano et al.
4,789,983 A 12/1988 Acampora et al.
4,817,089 A 3/1989 Paneth et al.
4,901,307 A 2/1990 Gilhousen et al.
4,901,319 A 2/1990 Ross et al.
4,910,794 A 3/1990 Mahany et al.
4,914,651 A 4/1990 Lusignan et al.
4,931,250 A 6/1990 Greszczuk et al.
4,939,731 A 7/1990 Reed et al.
4,991,184 A 2/1991 Hashimoto et al.
5,003,534 A 3/1991 Gerhardt et al.
5,022,046 A 6/1991 Morrow, Jr. et al.
5,038,399 A 8/1991 Bruckert
5,056,109 A 10/1991 Gilhousen et al.
5,093,924 A 3/1992 Toshiyuki et al.
5,101,501 A 3/1992 Gilhousen et al.
5,103,459 A 4/1992 Gilhousen et al.
5,115,429 A 5/1992 Hluchyj et al. 370/84
5,191,583 A 3/1993 Pearson et al.
5,204,876 A 4/1993 Bruckert et al.
5,235,614 A 8/1993 Bruckert et al.
5,267,261 A 11/1993 Blakeney, II et al.
5,267,262 A 11/1993 Wheatley, III et al.
5,276,261 A 1/1994 Mayer et al.
5,280,472 A 1/1994 Gilhousen et al.
5,280,537 A 1/1994 Sugiyama et al.
5,289,527 A 2/1994 Tiedemann, Jr.
5,297,192 A 3/1994 Gerszberg et al.
5,305,308 A 4/1994 English et al.
5,307,351 A 4/1994 Webster
5,317,123 A 5/1994 Ito et al.
5,343,513 A 8/1994 Kay et al.
5,373,502 A 12/1994 Turban et al.
5,375,123 A 12/1994 Andersson et al.
5,383,219 A 1/1995 Wheatley, III et al.
5,386,589 A 1/1995 Kanai et al.
5,396,516 A 3/1995 Padovani et al.
5,400,328 A 3/1995 Burren et al.
5,404,376 A 4/1995 Dent et al.
5,412,687 A 5/1995 Sutton et al.
5,414,796 A 5/1995 Jacobs et al.
5,416,797 A 5/1995 Gilhousen et al.
5,425,051 A 6/1995 Mahany et al.
5,434,860 A 7/1995 Riddle
5,442,625 A 8/1995 Gitlin et al.
5,459,727 A 10/1995 Vannucci
5,461,639 A 10/1995 Wheatley, III et al.
5,465,388 A 11/1995 Zicker 455/33.1
5,469,471 A 11/1995 Wheatley, III et al.
5,485,486 A 1/1996 Gilhousen et al.
5,491,837 A 2/1996 Haartsen et al.
5,497,395 A 3/1996 Jou et al.
5,504,773 A 4/1996 Padovani et al.
5,528,593 A 6/1996 English et al.
5,530,693 A 6/1996 Averbuch et al.
5,530,700 A 6/1996 Tran et al.
5,533,004 A 7/1996 Jasper et al.
5,535,239 A 7/1996 Padovani et al.
5,537,410 A 7/1996 Li et al.
5,559,789 A 9/1996 Nakano et al.
5,564,080 A 10/1996 Eul et al.
5,566,175 A 10/1996 Davis et al.
5,568,483 A 10/1996 Padovani et al.
5,577,022 A 11/1996 Padovani et al.
5,577,087 A 11/1996 Furuya et al.
5,579,306 A 11/1996 Dent et al.
5,594,720 A 1/1997 Papadopoulos et al.
5,594,949 A 1/1997 Andersson et al.
5,603,093 A 2/1997 Yoshimi et al.
5,604,730 A 2/1997 Tiedemann, Jr. et al.
5,612,948 A 3/1997 Fette et al.
5,621,723 A 4/1997 Walton, Jr. et al.
5,621,752 A 4/1997 Antonio et al.
5,634,195 A 5/1997 Sawyer et al.
5,638,412 A 6/1997 Blakeney, II et al.
5,648,955 A 7/1997 Jensen et al.
5,649,290 A 7/1997 Wang et al.
5,654,979 A 8/1997 Levin et al.
5,680,395 A 10/1997 Weaver, Jr. et al.
5,682,605 A 10/1997 Salter et al.
5,697,053 A 12/1997 Hanly et al.
5,699,365 A 12/1997 Klayman et al.
5,701,294 A 12/1997 Ward et al.
5,706,145 A 1/1998 Hindman et al.
5,710,768 A 1/1998 Ziv et al.
5,710,974 A 1/1998 Granlund et al.
5,726,978 A 3/1998 Frodigh et al.
5,729,557 A 3/1998 Gardner et al.
5,734,646 A 3/1998 I et al.
5,734,647 A 3/1998 Yoshida et al.
5,745,480 A 4/1998 Behtash et al.
5,748,677 A 5/1998 Kumar et al.
5,751,725 A 5/1998 Chen et al.
5,757,367 A 5/1998 Kapoor
5,757,810 A 5/1998 Fall et al.
5,764,687 A 6/1998 Easton et al.
5,764,699 A 6/1998 Needham et al.
5,764,899 A 6/1998 Eggleston et al.
5,768,533 A 6/1998 Ran
5,771,226 A 6/1998 Kaku et al.
5,771,451 A 6/1998 Takai et al.
5,771,461 A 6/1998 Love et al.
5,774,809 A 6/1998 Tuutijarvi et al.
5,781,539 A 7/1998 Tanaka et al.
5,781,583 A 7/1998 Bruckert et al.
5,787,133 A 7/1998 Marchetto et al.
5,793,759 A 8/1998 Rakib et al.
5,794,129 A 8/1998 Komatsu
5,799,005 A 8/1998 Soliman et al.
5,802,046 A 9/1998 Scott et al.
5,805,581 A 9/1998 Uchida et al.
5,805,585 A 9/1998 Javitt et al.
5,812,938 A 9/1998 Gilhousen et al.
5,822,315 A 10/1998 de Seze et al.
5,822,318 A 10/1998 Tiedemann, Jr. et al.
5,822,358 A 10/1998 Johansen et al.
5,822,359 A 10/1998 Bruckert et al.
5,825,761 A 10/1998 Tanaka et al.
5,832,368 A 11/1998 Nakano et al.
5,835,508 A 11/1998 Kushita et al.
5,842,113 A 11/1998 Nanda et al.
5,845,212 A 12/1998 Tanaka et al.
5,848,357 A 12/1998 Dehner et al.
5,850,605 A 12/1998 Souissi et al.
5,862,132 A 1/1999 Blanchard et al.
5,862,453 A 1/1999 Love et al.
5,870,393 A 2/1999 Yano et al.
5,872,775 A * 2/1999 Saints et al. 370/342
5,878,038 A 3/1999 Willey 370/335
5,883,887 A 3/1999 Take et al.
5,896,561 A 4/1999 Schrader et al.
5,901,142 A 5/1999 Averbuch et al.
5,903,554 A 5/1999 Saints et al.
5,914,950 A 6/1999 Chen et al.
5,914,959 A 6/1999 Marchetto et al.
5,918,184 A 6/1999 Wang et al.
5,920,551 A 7/1999 Na et al.
5,923,650 A 7/1999 Chen et al.
5,930,288 A * 7/1999 Eberhardt 375/148
5,933,421 A 8/1999 Alamouti et al.
5,933,462 A 8/1999 Viterbi et al.
5,933,787 A 8/1999 Gilhousen et al.
5,937,002 A 8/1999 Andersson et al.