
Chinthalapally V. Rao,1 Vernon E. Steele,2 Gary D. Stoner3 and Allan H. Conney4

On April 20, 2009, we lost a true gentleman and cancer researcher with the passing of Dr. Bandaru S. Reddy. Bandaru was a dear friend and distinguished colleague of many in the scientific community. To those fortunate enough to be included among Bandaru’s “second family” of postdocs and visiting scientists, he was a beloved mentor. He inspired students and colleagues alike with his expertise and depth of knowledge in many areas of carcinogenesis and in colorectal cancer prevention, his area of focused research. His enthusiasm and vision for cancer prevention research will be sorely missed.

Bandaru received a degree in Veterinary Medicine (1955) from the University of Madras, India, and an M.S. in Nutritional Biochemistry (1960) from the University of New Hampshire. He received his Ph.D. in Nutritional Biochemistry (1963) from Michigan State University. In 1963, Bandaru joined the Lobund Laboratory at Notre Dame. He joined the American Health Foundation in 1971 and remained there until its closing in September 2004. Dr. Reddy continued active research as a Professor in the Ernest Mario School of Pharmacy at Rutgers University until his passing this year. He held many high-level positions during his many years at the American Health Foundation, including Chief, Division of Nutritional Carcinogenesis, and Associate Director of the Cancer Center.

Bandaru played a major role in the evolution of colon cancer research during the past half century. His scientific impact extended well beyond his impressive 400 research publications. Bandaru’s research progressed through four main stages: (a) early work using germ-free rodents to study the effect of gut bacteria on experimental colon cancer; (b) epidemiologic studies done in collaboration with E.L. Wynder, correlating biomarkers of risk in populations exhibiting wide variations in colon cancer mortality and incidence; (c) basic and mechanistic studies of the role of dietary factors such as fat and fiber in conventional rodent models of colon cancer; and (d) studies of the development of a wide variety of chemopreventive agents, including phytochemicals and synthetic agents for colon cancer prevention and treatment.

One of Bandaru’s most significant achievements was his experimental observations on the relationship between dietary fat, fiber, and colon cancer risk. He provided unequivocal evidence in preclinical models that not only the amount but also the types of dietary fat markedly influence colon tumor development. His group was the first to show that diets rich in omega-6 fatty acids and saturated fats increase the risk of colon cancer and, in contrast, that diets high in olive oil (rich in monounsaturated fatty acids) and fish oil (high in omega-3 fatty acids) did not promote colon tumor development. These studies are being translated into ongoing dietary changes designed to prevent colon cancer in populations consuming Western-style diets by increasing fiber intake, especially wheat bran, decreasing overall fat intake, and substituting fats rich in omega-3 and monounsaturated fatty acids for fats rich in omega-6 fatty acids. These dietary changes should decrease the future incidence of colorectal cancer.

Bandaru’s laboratory was at the forefront of work to identify chemopreventive agents and apply knowledge obtained from preclinical efficacy and mechanistic studies to humans at a high risk for colon cancer. Bandaru published pioneering work on chemoprevention of colon cancer in preclinical models involving organoselenium, plant phenolics, curcumin (present in turmeric), and nonsteroidal anti-inflammatory drugs such as aspirin, ibuprofen, and cyclooxygenase-2-selective inhibitors such as celecoxib. Of particular importance, piroxicam, aspirin, sulindac, and celecoxib administered during the promotion/progression stage of carcinogenesis (at which time premalignant lesions are known to have developed) dramatically suppressed colon tumor formation, suggesting the potential of these agents for colon cancer prevention in patients with colonic polyps. The first to demonstrate synergistic cancer chemopreventive effects of combined compounds, such as nonsteroidal anti-inflammatory drugs plus DFMO, which work by different mechanisms, Bandaru’s research provided the basis for several successful clinical trials.

Bandaru’s research excellence was internationally recognized, resulting in numerous awards, including the DeWitt S. Goodman Lecture awarded by the American Association for Cancer Research. He was also featured four times on
the front cover of Cancer Research for his outstanding work. Bandaru served on study sections at the NIH and on many advisory committees and editorial boards, where his expertise in the areas of carcinogenesis and colon cancer research was greatly valued and appreciated. Above all, Bandaru's passion for mentoring young scientists is well known, and he is remembered vividly for this zeal and generosity.

Many colleagues and friends saw Bandaru as a vital, vibrant elder statesman of the field of cancer research, which made the news of his passing so sudden and unexpected. He was fortunate to be able to remain active doing the things he loved until a few days before his death. As a community, our thoughts go out to Bandaru’s wife, Subashini, his daughter, Sada, and his sons, Shudhakar and Shrikant. It is comforting to know that Bandaru leaves a deep legacy through his work that will benefit society and future generations of scientists. One important aspect of his legacy is a reminder that one can be an eminently accomplished scientist, a caring mentor, and a dedicated family man—a complete human being. He will be deeply missed.
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