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In this paper we introduce a modified Blum-Kiefer-Rosenblatt correlation (MBKR for short) to rank the relative importance of each predictor in ultrahigh dimensional regressions. We advocate using the MBKR for two reasons. First, the MBKR is nonnegative and equals zero if and only if two random variables are independent, indicating that the MBKR can detect nonlinear dependence. We illustrate that the sure independence screening procedure based on the MBKR (MBKR-SIS for short) is effective to detect nonlinear effects including interactions and heterogeneity, particularly when both continuous and discrete predictors are involved simultaneously. Second, the MBKR is conceptually simple, easy to implement and affine-invariant. The MBKR is free of tuning parameters and no iteration is required in estimation. It remains unchanged when order-preserving transformations are applied to the response or predictors, indicating that the MBKR-SIS is robust to the presence of extreme values and outliers in the observations. We also show that, under mild conditions, the MBKR-SIS procedure has the desirable sure screening and ranking consistency properties, which guarantee that all important predictors can be retained after screening with probability approaching one. We demonstrate the merits of the MBKR-SIS procedure through simulations and an application to a real-world dataset.