**Abstract:** In this research work, we analyzed different chemical substances using the RGB smartphone app. The research drugs are salicylic acid, disprin, and loprin. The five different concentrations of solutions were used. For the detection of drugs, a 4% ferric chloride reagent is used. The purpose of using this prescription drug is that it is commonly available. As a result, taking too many pain relievers can lead to serious health problems, even death. The RGB values of color concentration solutions give the values of RGB absorbance and transmittance. These RGB values are converted into intensities. These intensity values assist us in determining the concentration of solution based on color intensity. High-concentration solutions have low intensities, and low-concentration solutions have high intensities. The RGB values are measured by using diluted concentration solutions. A spot test on TLC is also performed and observed for the RGB values. Furthermore, a spectrophotometer is used to determine the absorbance value of a diluted concentration, and the transmittance value is obtained using an online converter. RGB's absorbance and transmittance values are obtained using aqua-dest RGB values. The results show that absorbance and transmittance have an indirect relationship. The concentration of 0.5 has a high absorbance, and the values of transmittance and intensity are low. The absorbance is low at a concentration of 0.1, and the transmittance and intensity are high. The remaining concentration values are between 0.5 and 0.1. Using a smartphone to determine the concentration of the color solution can be another method to overcome the limitations of colorimetric or spectrophotometric instruments.